Figure 5.47 The American Express travel and entertainment management process

Travel policy

A travel policy is invariably established at main board level within a company. At this level, it usually comprises an overall set of guidelines outlining key directives such as when different classes of travel may be used by staff travelling on company business and the various entitlements of different grades of employees. These policy statements are expressed as unambiguous guidelines for travellers and define a set of rules governing how travel suppliers are chosen. Despite the fact that this process may appear simple, it is often quite challenging for companies actually to implement their travel policies consistently throughout their organizations. Although it is at the heart of virtually all business travel activities, it is surprising how many companies either do not have formal travel policies or which do not communicate the policies effectively to their employees. A cornerstone of AXI is therefore the Policy Editor, which automates this process.

AXI's Policy Editor supports the formalization, communication, execution and monitoring of a company's travel policy. Access to the travel policy maintenance functions are of course restricted to a senior level within the company's organization. This is often the designated travel manager, head of personnel or chief financial officer. AXI enables a data base to be maintained of travel policy parameters. This is sufficiently flexible to allow different groups within a company to each have their own slightly different travel policy. AXI recognizes different policy groups and other

underlying environmental factors, such as the base currency, by means of codes assigned by American Express as part of the initial set-up process. Several other parameters and data elements combine to form a company's integrated travel policy, including for example:

- **Policy text**   AXI's Policy Editor supports the inclusion of a company's full travel policy in textual form. The policy may be indexed and stored using HTML, which supports hot links to other related sections and relevant parameters within the Policy Editor. Eventually, AXI will be enhanced to include context sensitive help functions that support automatic back referral to specific sections within the travel policy, as appropriate to the user's query.
- **Preferred and excluded airlines**   This is a powerful way for the company to keep a tight control on precisely which airlines its employees use for their business trips. Airlines can, under the complete control of the AXI user, either be included on the preferred list or specifically excluded. The old accusation frequently made by airlines during the negotiation process that the company has very little influence over which flights its employees choose, is groundless. With AXI, a company can instantly de-select a given airline or add a new carrier to its preferred list; any changes such as this take effect immediately. Similar functions also apply to hotels and car rental services (see the note on filtering below).
- **City airport selection**   A travel manager may choose the precise airports that are included

in availability displays for any given city. For example, a regional airport may offer cheaper flights than a city centre hub. However, regional airports have the disadvantage that they are often not quite so convenient. The person setting the travel policy can choose which airports to include in the GDS displays shown to their travellers by AXI (see the note on filtering below).

- **Number of stops** The maximum number of flight stops may be specified within AXI by the company as part of its policy. This allows the company to decide the limit to which it is prepared to let its employees suffer multiple stops *en route* to their destinations, in order to achieve low cost fares. Generally speaking, the higher the number of stops, the lower the fares. However, flight stops increase travelling time and add to a traveller's discomfort. It is therefore important that their use is carefully controlled. AXI will not show alternative flights that feature more stops than the maximum specified in the Policy Editor (see the note on filtering below).

- **Filtering** Many of the travel policy functions supported by AXI employ filtering techniques such as those described above. Filtering allows a company to decide those suppliers, airports and travel arrangements that are both allowable and non-allowable, within the bounds of its travel policy. While the AXI technology supports filtering, the decision over precisely how the filtering parameters are used is totally under the control of the client company. If a company decides not to use filtering, then its AXI users will be presented with all options reported as available by GDSs and other information systems accessed by AXI. In many respects this is no different from the way companies enforce their travel policies at the moment in a manual environment. The difference with AXI is that the technology allows companies to be more successful in applying their policies in actual practice and this in turn allows them to control their travel expenditure more effectively.

The automatic application of an effective travel policy provides a company with a substantial bargaining lever in its negotiations with suppliers. Historically, suppliers have taken the position in rate negotiation meetings that companies have very little immediate control over their employee's travel decisions. It used to be very difficult to get employees to switch from using one travel supplier, to using another, e.g. to switch from using Airline A from City 1 to using Airline B from City 1 without impacting other airlines and cities. With widespread use of AXI, however, this is perfectly possible (Fig. 5.48). By making a number of simple adjustments to AXI's Policy Editor, the company can cause an immediate impact on the business delivered to specified travel suppliers.

Planning, reservations and booking

Trip planning is a vast area within business travel and it is closely integrated with the reservations and booking process. This is why I have merged these two stages of the business travel life cycle into this single section. Historically, these stages have arguably been a booker's prime time-waster because the tasks involved can mean long spells on the telephone explaining travel requirements to a secretary or a travel agent, which is then followed by frequent call backs and changes associated with fare selection. With AXI, the business traveller or their designated booker, e.g. a secretary or personal assistant, can cut out these time wasting intermediate steps by directly accessing travel information, fare data bases and availability information themselves. What's more, the AXI system enables the traveller's personal preferences always to be taken into account at each stage. Let's examine how AXI supports the provision of travel information and reservation services in a little more detail:

- **Travel information** For many travellers, the first stage in the trip planning process is to carry out some basic research on the destination areas included in their proposed itineraries. AXI provides access to Microsoft's global mapping and travel information data base, which I have explained above under the Expedia heading. For corporate travellers this can be extremely useful because it allows them to check information, such as whether or not visas are required for the countries they intend
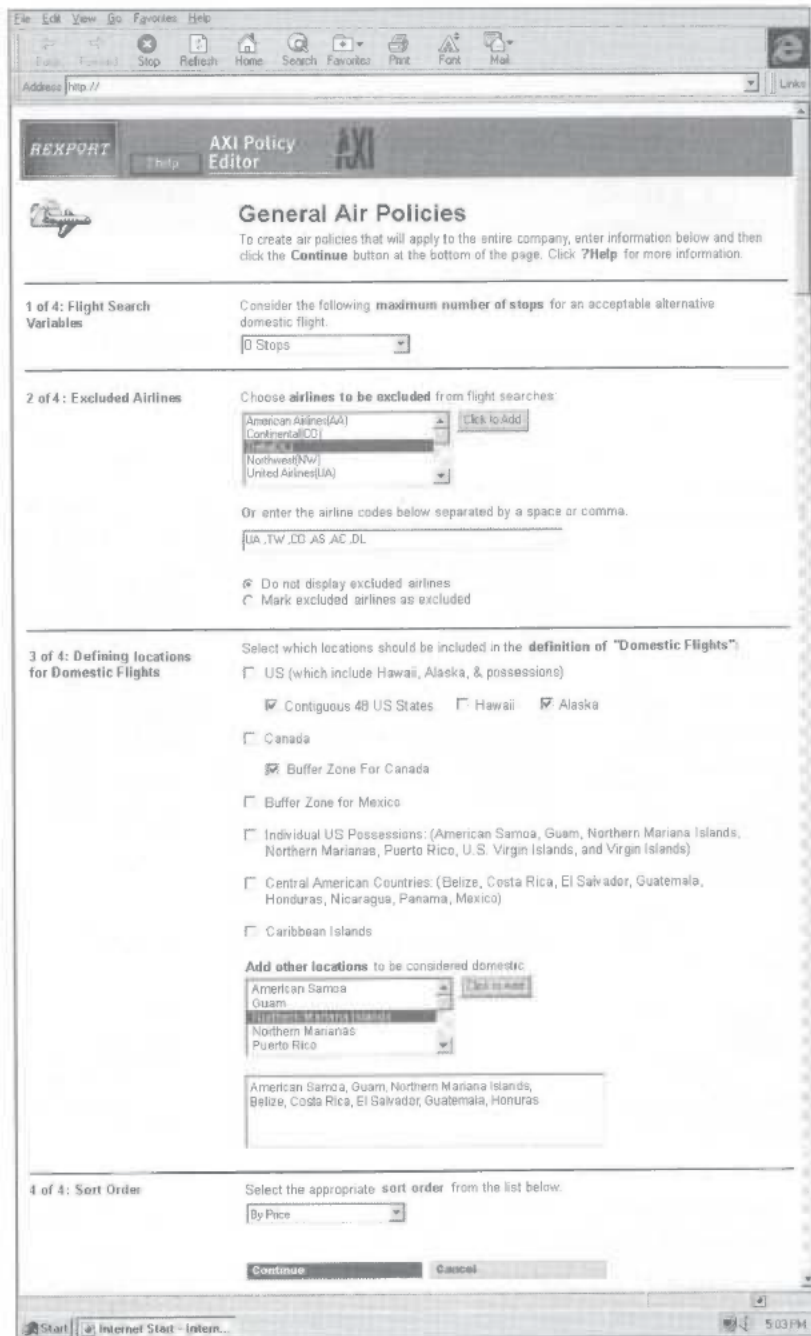
Figure 5.48 AXI general air policies page

to visit, what the weather forecast is for the region and what cultural events are taking place during their planned stays. The travel data base also contains a great deal of detailed information on restaurants and other attractions in the destination area.

- **Air** Travellers use the AXI GUI to define their requirements in terms of from/to city pairs,

date and time of travel, class of travel and many other parameters. When a traveller decides to request an availability display, AXI first consults its internal data base of specially negotiated fares for the itinerary specified. It uses these to construct an availability request that is sent to the GDS. In the USA, AXI uses the Sabre GDS; however, other major GDSs may
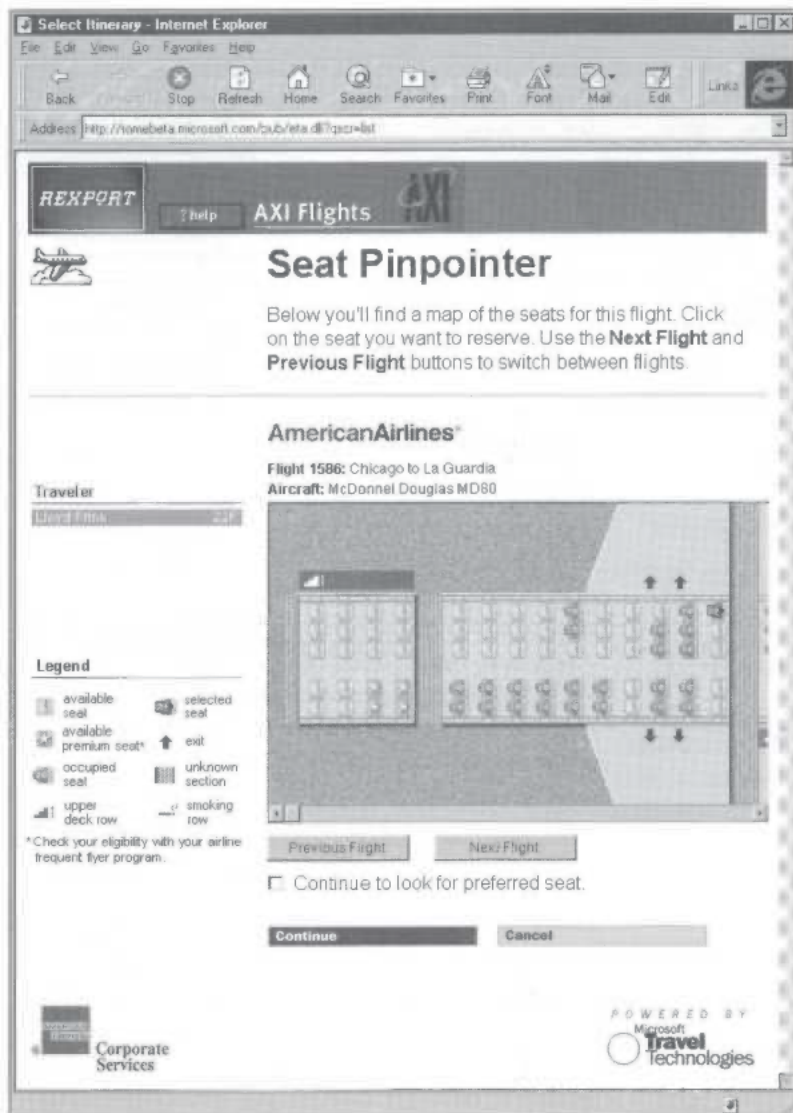
Figure 5.49 AXI seat pinpointer

well become available in the future as AXI is enhanced and extended over time.

The GDS responds with an availability display for each flight that meets the traveller's requested itinerary. Flights that are outside the company's travel policy may either be shown with a flag designating them as 'outside policy' or they may be excluded from the display altogether. The decision on which of these display options is implemented is made by the company and specified within the travel policy section of AXI. The availability display shows flights either: (a) in sequence on fare price; or (b) in sequence with those closest to the

chosen itinerary first and those farthest away last. The prices shown on the display are those that are taken either from the negotiated fares data base or from the scheduled fare as stored within the GDS. Negotiated fares may be either those obtained by American Express and available specifically for its customers or those that have been obtained by the company itself.

The traveller simply selects their chosen flight and can then either: (a) store the flight details as part of an itinerary that they are building in AXI, or (b) proceed with making the reservation. To make the reservation, the traveller's preferences must be entered. These

Figure 5.50 AXI best price tips page

can automatically populate many of the fields on the reservations page from a personal profile that each authorized traveller can maintain themself within AXI. This stores fields such as meal types, smoking or non-smoking preferences, the desired aircraft seating position, e.g. aisle or window, frequent flyer programme details and many more. Naturally, these pre-populated fields may be overridden by the traveller as necessary. When a reservations request has been successfully answered, i.e. the requested seat or seats are available on the flight, AXI's GDS response may in many instances offer the traveller a scrollable seat map of the aircraft (Fig. 5.49). This shows seats already reserved, those seats that are only available to members of the airline's frequent flyer programmes and other available seats on the flight. The AXI seat map therefore allows the traveller to choose their own seat: the availability of this function within AXI depends on whether or not it is supported by each airline's CRS.

- **Hotels and car rental** AXI uses a data base of hotels and car rental companies that is maintained globally by Microsoft as part of its MTT service. This data base is also updated by American Express with details of specially negotiated rates (Fig. 5.50). These special rates may in fact be of two main types: (i) rates that have been negotiated by American Express for general use by its corporate customers, or (ii) rates that have been negotiated by corporate customers themselves and are only available for their own use. Depending upon the authority of the end user, this data base may be searched and reviewed in many different ways. (From here onwards, I am going to be talking about hotels, as we explore how AXI works, but virtually the same remarks apply to car rental.)

When a corporate traveller requests AXI to perform a hotel search, the AXI server filters the data base to show the user only those hotels that their travel policy allows them to

see and that meet their stated accommodation requirements. At its highest level, the selected data base listing shows summary information and possibly a picture of the hotel, in ascending sequence on room rate. (The choice of whether or not to include a picture on these pages is taken by the hotel or its parent chain company in conjunction with Microsoft who retains editing control over the hotel data base.) If further details are required, the user may either choose to view details of the hotel and its amenities or may choose to view a map using Hotel Pinpointer.

The mapping feature is similar in many ways to that already explained above for Expedia, because AXI uses the same MTT platform to support this function. The map shown on the AXI first response page pinpoints the selected hotel in a wide-area context that includes the chosen destination. The user can then choose to zoom in and view the hotel's location at closer quarters or use the mouse to determine how far the chosen hotel is from certain landmarks. The user also has the option of drawing a box on the map and then viewing all of the hotels that fall within this boxed area. This is a powerful yet extremely simple to use feature of AXI, which has the added benefit of allowing the user to print the map for inclusion as a part of their travel documentation (Fig. 5.51).

When a hotel is chosen by the corporate traveller, the first two things they will want to know are the availability of the required room in that property and the daily room rate. AXI firstly interrogates its hotel data base for property and rate information. Following this, it automatically links to the GDS for room availability information. The following situations may subsequently occur, depending upon the hotel and rate chosen by the user. Either: (a) if the hotel and the rate are present in the GDS, then the availability is shown with an option to book on-line, (b) if the rate selected by the user is not stored within the hotel's GDS record then the user is offered the option of sending an availability request directly to the hotel, or (c) if the hotel itself is not present in the GDS then a request can be sent to the appropriate American Express travel office for follow-up and booking.

All requests made via AXI are handled by GDS PNR queuing systems that may employ several communication channels including, for example, teletype, e-mail, fax or the telephone. It is interesting to note that in case (a) above, the hotel and the traveller receive confirmation of the booking on-line, but the hotel must then pay the GDS a booking fee; whereas in (b) and (c) the hotel must manually process the incoming request to make the reservation and the traveller must wait for a confirmation, but the hotel does not need to pay the GDS a booking fee. It will be interesting to see how these economic dynamics influence the future ways in which hotels choose to record their rates within the GDSs, in particular for customer bookings involving specially negotiated rates.

The entire planning, reservations and booking process is undertaken within the company's travel policy, as created by the travel manager. This means that the availability displays that are shown and the rates that are used are all filtered through the travel policy parameters (see the note on *filtering* in the travel policy section above). If, for example, the company has decided not to include a specific airline in its displays, then that airline will not show on a corporate traveller's availability display. Finally, AXI checks to ensure that the planned trip falls totally within travel policy with regard to fare, class and carrier.

The company's travel manager determines the appropriate action to be taken when an attempt to book an out-of-policy trip is detected by AXI. The action taken can vary in intensity from a simple warning to the traveller, right through to freezing the booking altogether. If the booking requires pre-trip authorization, AXI will ensure it is not completed or ticketed until the required level of authority has been granted. This is achieved by means of a message that is automatically sent by AXI to the person responsible for authorization. This person can view all the trip's details, including any explanations for the out-of-policy

situation that the booker may have previously entered.

In certain situations, a company may allow an out-of-policy trip to go ahead. The company can use AXI to decide how it wishes to proceed in such cases. For example, AXI can either: (a) simply warn the travel manager that an out-of-policy trip is under way; (b) warn and document the out-of-policy booking and prevent it from proceeding; (c) document the situation but automatically authorize the trip, and so on. Each company can therefore use AXI to report out-of-policy situations as it sees fit for its travelling employees.

Ticketing and boarding

As electronic ticketing becomes more widespread, the issues associated with ticket delivery and boarding will recede into the background. Although AXI can handle e-ticket transactions, for the moment, the vast majority of airline tickets must be physically delivered to the traveller prior to their departure date. This may be accomplished by three methods: (i) ticket on departure – the ticket is collected by the traveller from an airline desk at the airport, (ii) collected from travel agent – AXI can queue the ticket for printing by an American Express travel agency location near to the traveller, or (iii) delivered to the traveller's home or office by secure express courier. For home or office delivery in the USA, American Express queues all tickets to the chosen carrier's central distribution hub, e.g. for Federal Express this is located in Memphis. The tickets are actually printed on-site in the hub, packaged and delivered overnight to the traveller's home or office. If at any time the traveller wishes to check on the status of their delivery, the AXI Web site home page contains a hot link to the carrier's own Web site. The Airbill Tracking number is used as the key to support enquiries from travellers.

Payment and expense processing

Payment for travel services can be supported by AXI in several alternative ways. Charges can, for example, be billed to the traveller's own American Express corporate card. This can be attractive from the company's viewpoint because it eliminates many of the accounts payable functions that are an inherent part of business travel. Or, certain expenses such as air and rail tickets can be billed to a lodge card. A lodge card is a single American Express card against which company travel expenditure is billed on a central basis, for all employees. The choice of payment method implemented by AXI is chosen by the client company in conjunction with American Express.

AXI also automates one of the banes of every traveller's life – the completion of an expense voucher following completion of the traveller's business trip. These functions are provided by AXI's Expense Manager application (Fig. 5.52). The primary source for the electronic expense voucher is the card charges that are submitted to American Express by service establishments, i.e. places where the traveller has used their card to purchase goods and services. When American Express receives these records of charge, either electronically or in paper form, they are input at regional operating centres around the world and eventually find their way into the corporate traveller's American Express card account. These charges may be viewed by the traveller and categorized for inclusion in their electronic travel expense voucher. Charges may be viewed in detail and the traveller may split them into the expense categories that their company uses.

In future, service establishment charge records may be available that are already split according to the services used. This is particularly relevant to hotel charges where the actual room rate may be only a small proportion of the total check-out bill. Not only will this facility make life easier for the corporate traveller but it will also enable the company's buyers to include other relevant expenditure in addition to room charges, when they negotiate future room rates with hotels and hotel chains. Finally, the traveller may create new entries for inclusion within their electronic expense voucher to record non-card expenditure, such as cash spent on taxis, tips and snacks. When the traveller is happy that their electronic expense voucher is complete, it is e-mailed to their designated authorizor (usually their line manager), for electronic approval. Approved expense vouchers are filed in a data warehouse that forms the basis for AXI's management information.
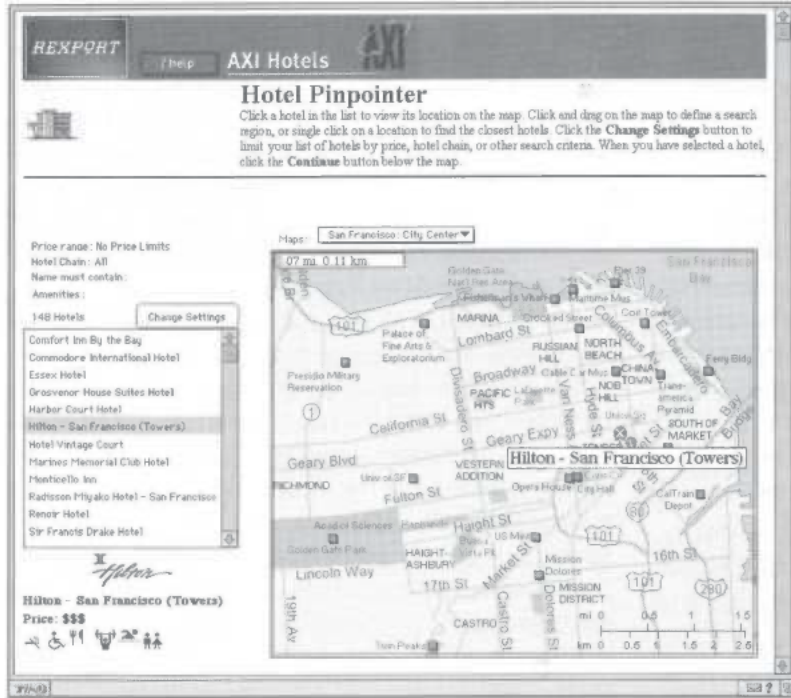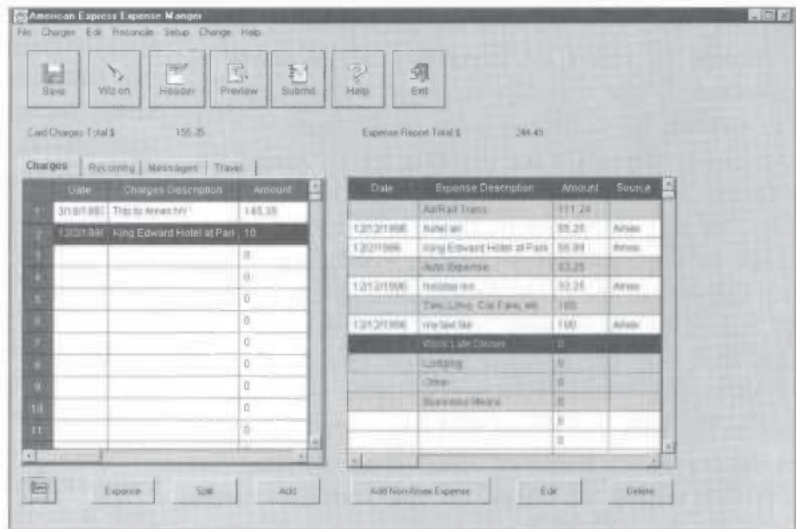
Figure 5.51 AXI hotel pinpointer

Figure 5.52 AXI expense manager

Management information

AXI has been integrated with several powerful management information applications that were originally designed to run in stand-alone mode on a company's own in-house PC. The functionality of these applications, known as Card Power and Trip Power, has now been migrated to AXI's Internet server, thus providing users with a choice of whether to run them locally or via the Web server. These software tools provide both internal and external management information functions. Authorized users can employ these management information support tools to select and process historical internal data in a variety of ways to measure travel expenditure and keep a check on the amount of business delivered to suppliers. Information on actual expenditure incurred can be

extremely valuable to a company in negotiating the best possible deals with suppliers and in reviewing the effectiveness of a company's travel policy.

An important source of external travel industry data is also available to authorized AXI users, such as the company's financial officer or travel manager. These data are researched and published by American Express Consulting Services and profile the travel patterns of other companies, e.g. the Air Fare Survey Index. Such information can serve as an extremely useful yardstick for benchmarking exercises that establish the relative effectiveness of a company's travel policy *vis-à-vis* others in related fields. In particular, it allows the company to review its corporate rates for air travel, hotels and car rental services with industry averages by business sector and city pairs.

The technology

The AXI development uses the MTT platform for many of its functions. This is the same platform that was used to launch Expedia, Microsoft's own leisure travel oriented Web site. The web pages use frame technology throughout, which makes the system very easy to use and navigate. Frames allow users to drill down into the depths of data structures yet always provide a means to hot link into completely new areas. Under the terms of the joint venture contract, American Express has a two-year exclusive licence to the jointly developed corporate product. The AXI architecture comprises several different elements:

- **AXI Web server** This is an Internet server operated by American Express that runs software applications supporting: (a) a central data base of travel-related information, and (b) the core AXI processing functions. AXI uses Microsoft back-office server software to support the Internet, Intranet, or for that matter client/server technologies for networking and central data base access. These Microsoft products include Windows NT Server, Internet Information Server and SQL Server. In addition to this, Microsoft products are also used to connect into American Express' back-office systems, which feature a quality control application, electronic ticketing, a low fare search facility and support for a data base of special

rates negotiated directly between clients and certain high volume travel suppliers. The core of the data base that stores hotel and car rental information is maintained centrally by Microsoft and distributed electronically to the AXI server.

- **Travel reservations server** The travel reservations server is located within Microsoft's computer facility in Redmond, Washington State. It actually comprises a number of server computers running software that interconnects AXI users with the GDSs, each of which uses different communications technology. Access to the GDSs provides AXI users with reservations functions for airlines, hotels, car rental services and, eventually, local supplier access in international areas.
- **Front-office** AXI's front-office client PC environment supports access to Internet technology and local processing using software that runs in the employee's desk-top or lap-top computer. The AXI PC client supports any browser that is HTML 3.0 compliant. The security and authentication standards used are SSL and Private Communications Technology (PCT). These enable credit and charge card transactions to be carried safely over the net. AXI also uses established American Express software products that provide company employees with a comprehensive business travel and expense management system.

All these products and remote data bases may be accessed via the Internet or a corporate Intranet from an employee's own desk-top or lap-top PC. So, as you will see from the above, AXI provides access to air, hotel and car rental reservations, a data base of company negotiated travel supplier rates, the company's travel policy, preferred supplier prompts, a wealth of destination information and the ability to track business travel transactions. The AXI service is a living product that will continually be modified and enhanced to provide applicability to other areas of the world. It will, for example, be adapted to show local language, value-added tax, foreign currencies and different postal code formats instead of USA zip codes. As the system is rolled out to other countries, it will connect into local supplier systems via its links with the world's GDSs. There are three connectivity

Corporate environment   **External environment**
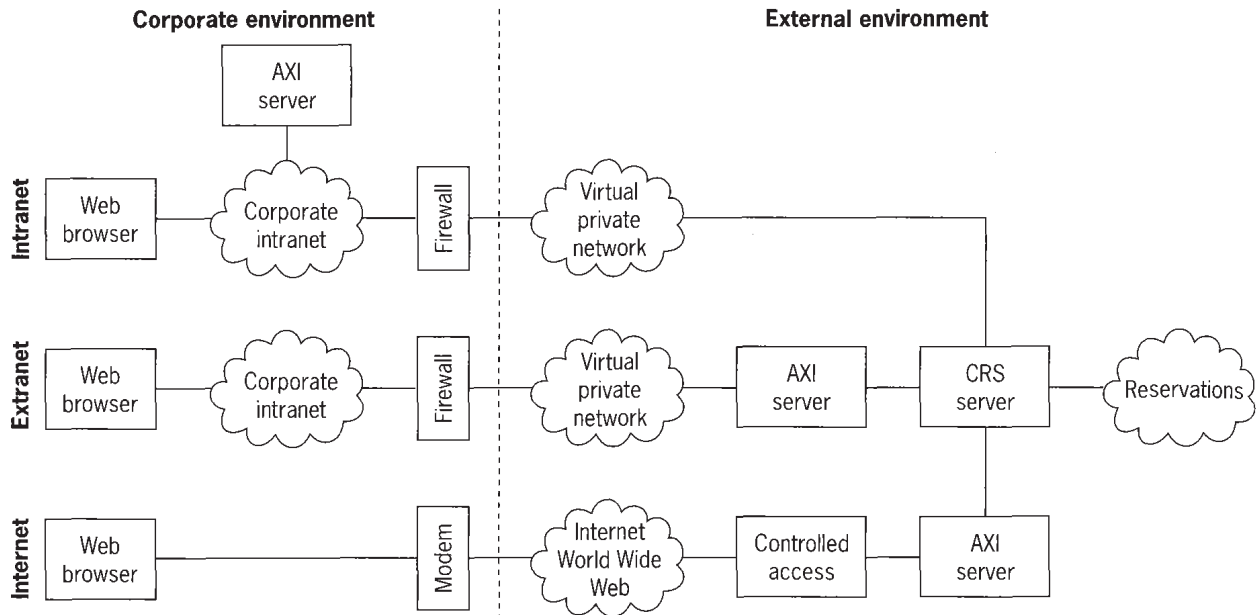
Figure 5.53 AXI network options

options that American Express customers may choose: Internet, Intranet or Extranet (Fig. 5.53). These are shown in Fig. 5.53 and are summarized as follows:

- **Internet** With the Internet option, both the corporate traveller and the company's head office staff access AXI via the public Internet. Dial-in access is provided by the company's chosen ISP. Using the Internet has the benefit of wide-scale geographical availability, including access services provided by ISPs with gateways in many countries around the world. Global access can be especially useful for business travellers who need to keep in touch with AXI via their lap-top PCs during trips.
- **Intranet** The Intranet option is available for companies that choose to run their own in-house communications networks with firewalls for protection against unauthorized access. Companies may therefore choose to implement AXI on their own in-house servers, which are kept up-to-date via information feeds channelled through head office connections to American Express.
- **Extranet** The Extranet option is very similar to the Intranet option except that the AXI Web

server is actually run by American Express. This still allows the company's travellers to connect to AXI via its own private and secure Intranet, complete with firewall protection. In this environment, travellers access AXI via the company's private network, which is connected via the firewall with external computers such as the AXI Web server run by American Express.

To use AXI, a company must be a customer of American Express. In other words the client company must use the American Express business travel service and ideally should also be a corporate card-member. The company may then be granted a domain name by American Express that enables it to access the AXI Web server. This provides a client company with the automated core business travel services, but it still needs to be supported by a global network of human beings and servicing offices. After all, even in a fully automated electronic world, post-reservations support is critical. This is an integral part of the AXI service and is provided by the world-wide network of American Express offices and a 24-hour hot-line. It may be complimented further by a link between the company's corporate card and the travel information services of AXI.

The real issue for American Express is the degree to which companies will use AXI. Even for those companies that decide to implement the system, a significant internal selling job will need to be done on stalwarts. Despite the fact that AXI is so simple to use that it requires no formal training, there will no doubt be many employees who will resist change and continue with the old tried and proven travel services. However, there is a real impetus for companies to encourage the widespread use of systems like AXI because they have significant benefits, some of which may be stated as: (a) enabling a company's travel policy to become a powerful management tool and not just an administrative overhead; (b) substantially reducing the amount of time spent by travellers on completing trip requisition forms, travel expense vouchers and other forms of bureaucracy, thus increasing overall productivity; (c) helping a company obtain better deals from suppliers supported by accurate management information and the effective implementation of travel policy; and (d) delivering a more efficient and better informed travel service to business travellers. So, I think that companies will, over time, stipulate that an integral condition of being able to travel on company business is that the designated corporate travel system must be used for all aspects of travel, just like they stipulate that standard expense vouchers must be used to record expenses today.

RESASSIST

One such product is ResAssist '96, which was developed by the Travel Technologies Group (TTG), a USA company based in Dallas, Texas. This is a fairly new product, even in its home market of the USA. It is being marketed in the UK by ICC Travel Systems, the company that also sells the Concorde agency management system (see Chapter 7 for a more detailed presentation of the company and its main product – Concord).

ResAssist '96 is an end-user booking tool that is aimed at the corporate market. It is a product that travel agents can take ownership of, and market to, their corporate accounts. This enables business travellers to user their lap-top PCs to accomplish many travel booking functions themselves

such as: viewing flight availability, changing existing bookings, making new reservations for flights, hotels and cars, and booking completely new trips. The product comprises a number of inter-related software products, many of which are industry standard, and access to TTG's Internet server on the World Wide Web. All of the following products may be offered by travel agents to their corporate customers:

- **Personal computer software** The ResAssist '96 software runs on a variety of PCs that may use Windows, UNIX or Macintosh operating systems. It is highly likely that most of the PCs running ResAssist '96 will be lap-tops because it is the frequent business traveller who stands to gain the most from this product. The user's PC will require one of the common Internet Web browsers. To access ResAssist '96 the traveller uses the Web browser to access the travel agent's Web site (see below) and, by entering their password, gain access to a main menu of options that includes: (a) Reservations – start a new trip, view or edit an existing trip; (b) Traveller – edit traveller's profile, select another traveller; (c) Destinations – view a destination, create a new destination, edit an existing destination; and (d) Company – edit company travel settings, create new contract, edit an existing contract. Some of these functions are restricted to certain personnel within the company, such as the company administrator. Others are fully accessible by all authorized travellers.
- **Travel agent's Web site** TTG offers travel agents two options for their Web sites. Either they may use TTG's service bureau Web site and effectively rent space from TTG or they may use their own Intranet Web servers which are owned and operated by the travel agency with an on-line link into the World Wide Web. In either case the travel agents will be using the TTG ResAssist '96 software to set-up and run the systems for their business travel customers. This software allows the company's travel policy, negotiated fares, preferred suppliers and other key parameters to be stored centrally and used to control all bookings undertaken by their business travellers.

- **Internet booking engine** Travel availability and reservations are provided by TTG's booking engine, which is linked to the major GDSs of the world. Wherever the travel agent's Web site may be, i.e. either on the TTG Web computer or on their own Intranet computer, booking requests are routed from the traveller's PC, over the Internet and into the TTG booking engine computer in Dallas. This computer system translates between the simple GUI format that is presented to users of ResAssist '96 and the more complex native commands used by the GDSs.

A traveller uses ResAssist '96 by first of all logging onto the Internet through their chosen point of presence, i.e. their Internet service provider. This may of course be accomplished from virtually anywhere in the world. They then enter their travel agent's URL, which will transparently link them either to the TTG Web site or to the travel agent's own Web server. In both cases the traveller is under the impression that it is the travel agent that is providing the on-line booking service, not TTG. Travellers are presented with simple user-friendly screens formatted in standard windows style, which they complete for booking purposes. First the date and time of travel is entered, followed by the destination city. This is either done by direct entry via the keyboard or by selecting entries from a list, e.g. destination cities. Behind the scenes, ResAssist '96 sends a message to its central booking engine computer in Dallas that is translated into GDS format and sent to the relevant GDS. After a few seconds, a response is received and translated into the simple format used by ResAssist '96, before being sent to the user's PC screen. This flight availability information is received by the user within a period of 10 to 30 seconds from the time of their original entry.

ResAssist '96 offers the traveller various choices based on the corporate travel policy, negotiated fares and company preferred suppliers. The contract fares, lowest applicable fare options and best time options are clearly identified. The traveller has the option of specifying a variety of sort options in order to help them decide the best travel alternatives. Once the traveller selects their choice of flights, a simple entry confirms the booking. A similar procedure is then followed for hotel and car rental services. Again, the ResAssist '96 responses are policy compliant showing negotiated vendors and pricing. Finally, live seat maps retrieved dynamically from Sabre, Apollo and Worldspan allow seat selection to be made. By using the ResAssist '96 user-friendly interactive dialogues over the World Wide Web, the traveller can build up a complete itinerary of their planned trip. When a booking is required, ResAssist '96 brings the travel agent into the loop.

The travel agent is brought into the booking loop by means of standard GDS queuing features. Each PNR created by the traveller using ResAssist '96 is automatically queued to the travel agency, whether it be located in the traveller's home town, another city or even another country. This is just one of the powerful GDS tools that TTG has used to enhance the level of control over the booking process. ResAssist '96 therefore enhances control over the business travel life cycle by means of two key features: (i) it allows the company to maintain close control over travel policy, and (ii) it allows the travel agent to keep a quality control check over all bookings.

The corporate travel policy is built in to ResAssist '96 by the company administrator, often the travel manager. This is done via the travel agent's Web site, as described above. The administrator logs onto the site and then uses a Web page editor to enter key policy parameters including, for example, allowable fare classes per employee grade and length of flight, negotiated air fares to be used on certain journeys, negotiated hotel room rates, preferential car rental rates and preferred suppliers. All of these fields are stored within the travel agent's Web site and subsequently referenced during the booking process undertaken by the traveller.

The quality control checks that ResAssist '96 supports, are possible because all bookings and changes to booking files are channelled via the GDS queue management system, to the company's travel agent. This means that when a traveller uses a lap-top computer to make a booking, it is queued to the travel agent for quality control checks prior to ticketing. These quality control checks may include, for example, ensuring that the traveller's department code is present in the

PNR, checking that the traveller has the required travel documents for the trip and ensuring that all MIS data are correctly recorded as per company policy. Ticketing need not be restricted simply to the travel agency location. It can for instance be queued to the nearest airport to the traveller for processing as a TOD. This is a good illustration of how productive it can be for a travel agent to be kept in the loop between the traveller and the supplier and consequently protect their source of income, i.e. commission from suppliers on the sales of product.

This type of technology brings several important advantages to all participants. It provides companies with an effective way to implement their corporate travel policy. From the business traveller's viewpoint it provides direct access to on-line supplier information without having to spend a long time on the telephone, possibly to an agent back in the company's home town. Finally, from the travel agent's perspective, it takes away a great deal of the routine administrative work associated with making and maintaining a booking.

TRAVELNET

TravelNet is a product of Reed Travel Group (for more information on Reed Travel Group please see Chapter 3 – Suppliers). Based in Santa Clara, California, TravelNet developed an Intranet-based product for the business travel market. In January 1997, TravelNet was acquired by Reed Travel Group and became an integrated brand within the enlarged group's portfolio of travel-related products. TravelNet is a corporate booking travel management system that delivers benefits to business travellers by allowing them automatically to book air, hotel and car reservations directly from their desk-top or lap-top computers via a company's corporate Intranet. Using an Intranet provides companies with a higher degree of security and control over access to their travel information and booking mechanisms. However, companies have the choice of making their corporate Intranet – along with its TravelNet system – available to travelling employees via the World Wide Web. Users must, however, have an authorized user log-in, password and corporate identification to access TravelNet. From a corporate perspective, TravelNet allows travel managers to access up-to-the-minute reports to help better manage policy compliance, supplier utilization and travel costs.

The TravelNet software, which runs on the travellers' PCs, is compatible with Microsoft Windows, Apple Macintosh and UNIX-based operating systems. Using their PCs, users can access their personal profiles stored on the TravelNet server, which also holds their trip and expense histories. The workstation software allows users to specify their itineraries using a windows GUI, which is very easy to use. The basic booking screen has five vertical action buttons down the left side of the screen (New Trip, Change Trip, Get Calendar, Help and Exit) and six horizontal menu items across the top (Air, Car, Hotel, Trip Notes, Itinerary and Reserve). The body of the screen contains a set of fields that depends upon the specific combination of action button and menu item selected by the user. Finally, the desired itineraries are checked against the company's travel policies, which are stored as part of the TravelNet data base residing on the corporate Intranet.

Once a booking request has been formulated, integrated with policy and checked by the user, it is transmitted to a GDS for availability checking in real-time. Both the Sabre and Apollo GDSs are supported by TravelNet. A response from the GDS is received within a matter of seconds. It shows several options, each of which is ranked by the degree to which it conforms to the company's travel policy. This display also shows availability and other important information as presented by the GDS and TravelNet. For example, contract fares – which may have been specially negotiated by the company – are included in the availability display. The traveller can then use TravelNet to explore many 'what if?' scenarios, such as: 'Will it change the cost if I stay over Saturday night?' Finally, once an itinerary has been built, TravelNet automatically processes travel authorizations.

TravelNet uses the Intranet server to store the company's travel policy and collect management information on actual trips undertaken. Several reports are produced that may be either viewed on-screen or printed for use by the company's travel manager. Many alternative report formats are available, including tables and pie-charts. These

reports measure policy compliance, show airline market share, vendor utilization, travel patterns and trip expenditure – all of which are vital if a company is to negotiate the best possible deal with its travel suppliers. Other reports show negotiated rate utilization, total trip expenditure and travel policy exceptions. These are used by divisional line management to control costs and keep travel expenditure within operating budgets. The data reported on corporate travel reports may be taken either from bookings made via TravelNet or from bookings made through the company's travel agent. TravelNet may also be integrated with many third-party expense reporting systems.

Tourism on the Internet

The Internet is a natural medium for tourist organizations. It enables a country or area to create an encyclopaedia of information and even booking functions that can be distributed to every part of the globe accessible via a PC and modem. There are many Web sites devoted to tourism and it has been impractical for me to begin to address more than two of them here. However, I have included two relatively new and important sites that illustrate the power and reach of the Internet: the British Tourist Authority's **www.visitbritain.com** site and the Ireland national tourist board's award winning site **http://www.ireland.travel.ie**.

In reading how these sites operate I would suggest you look out for an interesting and recurrent theme that is one of the main issues facing tourism on the Web. I am talking about the ability of tourism Internet sites to facilitate bookings for their visitors. Most tourism Internet sites contain a fair amount of information on accommodation services, usually at the low end of the price scale. The kinds of establishments that fall into this category are the bed and breakfast houses and small independent hotels. Most of these do not have any kind of automation simply because they do not need it. At present, there are few third-party booking services with automated systems that could be connected to the new Internet sites. Naturally, if the visitor wishes to stay at one of the larger chain hotels then on-line booking functions via the Internet may well be available, e.g.

see Marriott in Chapter 5. However, this is not often the case for the SMEs, which comprise one of the most popular sectors of the market for tourists to Great Britain. So, the nub of the issue I am addressing here is: 'How can a tourism Web site visitor book accommodation with SMEs in the destination country of their choice?'

One possible way is for the tourism Web site organization to obtain a computerized inventory control system that would enable it to process on-line reservations for rooms. There are several software packages that could support these booking functions and that could be connected to the main Web site server. The problem is that if the tourism organization were to embark on this course of action then it would need to engage in all the usual commercial activities that are a part of running a business. It would, for example, have to be contracted to card companies, contracted to the accommodation establishments, operate substantial computer and telecommunications resources, charge a commission, accept some form of liability or at least responsibility for the quality of service provided to customers and last but not least, it would need to generate a profit. These commercial activities are in many cases incompatible with the role of national or regional tourism organizations. Their constitution usually contains some form of not-for-profit business objective.

Accommodation booking services are, however, a fundamental requirement for most visitors. While some sites try to support bookings by means of electronic mail and faxes, these are nowhere near as satisfactory as an on-line booking system that immediately guarantees the visitors the accommodation they need. There is therefore an opportunity for a third-party company to provide an automated Internet booking service for SMEs. If this could be done then the tourism site could 'point' to the booking site whenever the visitors reached the stage of wishing to make firm bookings. This would seem to offer some important benefits to all the parties involved: (a) it would leave the tourism organization free to focus on its core role, which is the promotion of tourism in domestic and overseas markets; (b) it would enable the booking service company to enjoy a new revenue stream, which would not be bundled up with the tourism organization's finances; and

Table 5.3 Nationality of visitors to the 'old' BTA Internet site

Nationality of BTA's site visitor	%
USA	61.00
UK	13.00
Canada	5.00
Australia	5.00
Japan	2.50
Netherlands	2.50
Germany	1.50
Sweden	1.50
Brazil	1.00
Finland	1.00
Singapore	0.75

makes VisitBritain possibly the largest and most content-rich Web site originated in Britain. The site therefore contains information on the principle headings of accommodation, events, attractions, English language schools and other activities (see Chapter 2 for more information). The important point to remember here is that the TRIPS information upon which this site is based is kept up-to-date as part of the embedded life cycle of the BTA's and ETB's ongoing tourism operations.

The VisitBritain site is entirely consumer driven and is based on Internet frame page architecture. Its welcome page shows a map of Great Britain, which is the initial consumer interface page. This supports a variety of drill-down features, keywords and search engines. Special promotions are displayed to users at all times by means of Java applets that run moving image sequences across the screen. Information is generally divided into the following main categories: (i) Great Britain as a destination, (ii) regions of Great Britain, and (iii) special promotions:

- **Destination Britain** Britain as a destination presents the consumer with general information about Britain and with pertinent facts needed when planning a visit. Hot links to other sites are also embedded within many VisitBritain pages. Internet versions of successful BTA campaigns, such as the Movie Map, i.e. locations that

have been the subject of films and TV movies, British Arts Cities, and Style and Design. There are also special interest sections for those keen on cycling and walking.
- **Regions** The areas of Britain begin with a page that shows a map of the UK, sub-divided into the major geographical areas. When a consumer clicks on an area of interest, a more detailed map is displayed. This process continues until a choice of specific tourist information is presented.
- **Special promotions** Special promotions show the consumer information relating to bargain breaks, special deals offered by suppliers and other incentives that are designed to encourage tourism to the UK. There will be up to ten new special offers every month from the travel industry and a media room will give journalists access to all the latest BTA press releases, media briefings, travel stories and even video footage.

The BTA site also incorporates a powerful and easy to use search engine. Consumers select areas of interest simply by clicking on check boxes and radio buttons. Specific place names may also be entered. The site then responds with all of the desired services that meet the search criteria. If necessary, a complete list of suppliers that also meet the criteria may be displayed. Many of these also provide graphical images and maps of their products or sites. Consumers may elect to store the results of their searches in private itineraries known as 'virtual brochures', which may be constructed as they browse the site. At the end of their sessions, the accumulated set of information comprising their virtual brochures may be sorted into itinerary sequences and then either: (a) stored on the site for future reference, or (b) downloaded to their PCs for local storage and printing. A virtual 'shop' is also provided that enables consumers to purchase books, guides and gifts with secure on-line payment using their credit cards. The following is a quick summary of the main action button that site visitors may click on to see what is available on the VisitBritain site:

- **Introducing Britain** A whistle stop tour to give the uninitiated a taste of all that Britain has to offer.

- **The Shop** Visitors can choose from 39 books, guides and gifts. Secure on-line payment can be made by credit card, phone, fax or e-mail.
- **Facts and Figures** For students, the travel industry and the more serious minded tourist, this part of the site features detailed information on Great Britain, its constitution and the economy.
- **Special Offers** Up to ten new offers every month from the travel industry – tour operators, hotel groups, destinations.
- **Search** The VisitBritain search engine can select items of interest from the 40,000 pages that make up the site.
- **Destinations** England, Scotland and Wales and all their regions, areas and towns, including many links to other sites.
- **Home** This is a tab that is always displayed on every page and enables visitors to return to the home page from wherever they may be within the site.
- **Activities and Attractions** Places to visit, food and drink, culture, sport and other things that potential visitors would be interested in.
- **E-mail** Site visitors may easily send the BTA an e-mail simply by clicking on an envelope icon at the top of the page.
- **Full Index** This contains an alphabetic index of all the pages of information that are held on the site.
- **Virtual Brochure** Visitors can accumulate information within their own virtual brochures but they must first register with the site in order to use this facility.
- **Map** Click on the map image to zoom in on regions and areas. From icons on the map visitors can access any of the 40,000 records with information describing England, Scotland and Wales. This includes accommodation, events, places to visit, TICs and language schools.

One of the most important features of the Visit-Britain site is the accommodation section. This can be reached by several routes, the main ones being either the search engine or the map. Once a site visitor has specified the area and type of accommodation required, they are presented with a list of several possible places to stay. Each shows a full set of details about location and amenities,

as well as the price. Because the VisitBritain site is not currently connected to any on-line booking system, this information is static. So, it is impossible at present to know whether or not the room in a particular establishment is available for certain specific dates. The site does, however, put the visitor in contact with the selected property by one of several means. First of all, if the property has an e-mail address then a request for reservation is e-mailed to them. Otherwise, if the property has a fax machine, a pre-formatted fax message is automatically sent. Finally, if the property has neither e-mail or fax then the VisitBritain site will generate a printed reservation request that is delivered by regular mail. While this is adequate for the present, an on-line booking facility would be preferable. This is something that the BTA may therefore well have under consideration for the future.

A particularly important feature of the site is data base marketing. This is made possible by the customer registration process. While casual site visitors may browse the site and obtain a great deal of useful information, the more serious site visitors are encouraged to register. Site registration must be completed, for example, before a visitor can start building their virtual brochure. Registration entails the site visitor entering some data (including their e-mail address), which enables a personal travel profile to be assembled by the BTA. When coupled with information on how this person actually used the site and what pages they viewed, this should enable a very powerful and accurate customer data base to be accumulated. As I have already mentioned in the section on marketing of this chapter, this is a critical feature of any Internet site. It should enable the BTA to target customers from all around the world with e-mail containing information that is particularly relevant to its particular interests in Great Britain. The marketing and promotion opportunities that could be generated as a result of this data base are enormous: in the not too distant future, this will enable the BTA to program the site so that each time a registered individual visits, it will show them the special interests they asked to see.

Companies can advertise on the VisitBritain site in a number of ways. First, there are special offers and promotions. A company can have its

special offer mentioned on the home page and featured in the section reached by the Special Offers button. Then there are banner advertisements. These appear on the home page and other strategic points throughout the site. They allow the user to be routed automatically to an advertiser's own site by simply clicking on the banner itself. The BTA will also allow whole sections of its site to be sponsored and interactive partners with their own Web sites can participate in collaborative promotions with the BTA. Finally, there is the search engine. Companies can have keywords of their choice included within the VisitBritain search engine parameters and also in hot links throughout the site.

In designing the VisitBritain site, the BTA recognizes that consumers in different parts of the world will need to view it through a local gateway. By this I mean that they will need to be able to see certain items of information that are particularly relevant to them and ideally communicated in their local language. The BTA therefore intends to develop customized market gateways in North America, Japan, Australia and Singapore. These will allow overseas BTA offices to work with local partners to provide travel information and special offers translated into the home language and tailored towards its specific customers in these important inbound market areas. Opportunities also exist for British companies with a strong presence overseas to work with the BTA in all major markets. There will also be hot links into parts of the main site that most appeal to the market segments already identified by BTA as priorities. The BTA will promote the VisitBritain site by including the URL, i.e. site address, on all 128 titles of its literature, which are published in 25 languages producing 18 million copies world-wide.

Eventually, once the consumer aspect of the site is up and running, the intention is to develop a market facing aspect of the site. This will be a virtual Intranet because it will embody pages that can only be accessible by registered trade bodies approved for access by means of password control. This site will, for example, provide special rates on accommodation and attractions that may be of interest to a tour company considering creating a UK inbound package holiday for sale in its local overseas market. There will also be general information that tour companies need to create tours and facts on specific market segments. In short, the site will provide tour operators and other companies with all the information they need to bring visitors into the UK.

The technology

The 1997 VisitBritain site is totally new in terms of its presentation and user interface. Although designed using the experiences gained from the 1996 Intranet experiment, the new site offers some significant improvements and enhancements, many of which are based on Microsoft SeQueL Server technology with Internet Adapter. This handles user registration and holds 40,000 records of hotels, places to visit, events, TICs and English language schools. Behind the scenes, Microsoft Usage Analyst allows the BTA to monitor who is using the site and how they are using it. The BTA has applied to one of the industry's leading Web site auditors, ABC Electronic, for certification of its traffic audit, which is generated internally.

The VisitBritain Internet server is a Compaq Proliant 200 MHz Pentium Pro with 120 Mb RAM and 20 Gb of RAID disk array that is currently run on a facilities management basis, just like the ETB's Intranet experiment. However, the BTA is considering moving its new server so that it is co-located at an ISP's premises. The current Web site uses Microsoft's Internet Information Server (IIS) Version 3, which is used to deliver pages to site visitors. Active server pages (ASPs), customize the data base content and allow pages to be built on the fly.

A software product called MapObjects ActiveX and its components provide the interactive maps for the VisitBritain site. Internet Map server ActiveX's components talk to the Internet server applications program interface (ISAPI) filter of IIS to integrate MapObjects with IIS. This system processes and creates the maps in parallel with the Web server allowing more users to be processed simultaneously. Black Diamond's Surround Video is used to bring images of Britain (including the Silverstone racing circuit and Avebury's stone circles), to life.

Like the experiment, end users may use Netscape Navigator Version 3 and Microsoft Explorer Version 3 to browse the new BTA site. These

browsers support the frame-based construction that has been used to build the pages for this site. Less sophisticated browsers are also supported but these will not allow the user to enjoy the frames, Java applets and Giff images that really bring Internet pages to life.

Implications for Great Britain's tourism

In my view, these new developments in IT that the tourism organizations of Great Britain are pushing forward, offer significant potential for radical change in the way tourism is promoted and supported around the world. In this section I will give my own opinions on some of these implications.

Looking to the future, I think it could well be that the VisitBritain Internet site will eventually replace the PIMMS marketing and brochure distribution system (see Chapter 2 for more details of PIMMS). Instead of overseas consumers contacting their local BTA offices either by telephone or by visit, they could instead access BTA's site on the Internet from their home or office PCs. Access to the site could in many instances provide the answer to the consumer's or the travel company's query. In cases where a brochure is still required, the request could be logged by the Internet site and fulfilled centrally. This will depend upon the growth in the number of consumers who are able to access the Internet. This in turn will undoubtedly depend to a large extent upon the wide-scale availability of enabling consumer technologies, such as net-PCs and digital interactive television.

In my view, this could have far reaching consequences for the BTA's *modus operandi*. Depending upon how the service is received and on the take-up of the Internet overseas, this development could result in substantial structural implications for the BTA's organization and deployment of resources. I think there are at least two significant opportunities that the Internet offers the BTA: (a) electronic publishing, and (b) central distribution. I'll consider each opportunity in turn:

- **Electronic publishing**   BTA offices often stock up to as many as 300 different brochures. Now, brochures are costly to produce and incur an overhead in distribution, stocking and logistics. They also need to be regularly updated and

consequently there are occasions when substantial amounts of out-dated stock may be destroyed. So, publishing this kind of information electronically offers the BTA a chance to reduce these costs and at the same time provide more up-to-date information for consumers and travel companies.

It is perfectly possible for much of the information included in brochures to be made available on the Internet, including photographs, pictures, maps and graphics. In fact by comparison with paper publications, the Internet offers a wider range of media for bringing electronic brochures to life, including sound bites and interactive dialogues. Besides on-line use, many travel companies and an increasing number of consumers can already download information for local viewing and printing. As the Internet gains in popularity and usage, electronic publications of this type will become ever more popular.

Many of the BTA's publications are printed in several languages, in addition to English. But because the generally accepted language of the Internet is English (or rather American!), it is quite possible for the electronic brochures to be published on the Internet in English. In the future, it may even be possible to use special software to translate English language text automatically into a foreign language. This is yet another factor that should allow the variety of different brochures to be reduced.

When all of these things happen, I think the BTA could be attracted to undertaking a redesign of its range of paper-based publications and streamline them significantly. No doubt certain items of information will always need to be printed on paper. However, a significant proportion could well be produced and distributed electronically, direct to consumers and travel companies. Because printing and distribution costs are a major item of operating expense, the BTA could use the funds thus liberated for further promotional programmes that encourage tourism to Great Britain.

- **Central distribution**   If the VisitBritain Internet site is indeed successful and is heavily used, then I can foresee a situation where overseas BTA offices could well require fewer local resources.

Instead of visiting or telephoning the local BTA office, consumers and travel companies would access the VisitBritain site on the Internet. Either the site would provide the information required or it would support automated brochure requests. In my view this could create the demand for a new central distribution facility whose role would be to fulfil end-user requests for brochures and other paper-based products.

This central facility would receive requests for brochures and other items of information from consumers and travel companies in other countries. Such requests could be effectively dealt with by a high volume fulfilment service. I think this new fulfilment service could be provided in one of two ways: (a) it could be set up by the BTA itself using in-house resources, or (b) it could be out-sourced to a private company and provided to the BTA on a facilities management basis. It is quite possible for this distribution facility to be created in regional areas or even possibly on a global basis. However, the overriding factor will be the need to supply the customer with the information requested in the shortest possible time.

These are just two examples that I have constructed to illustrate how the Internet could pose a significant opportunity for tourism companies and organizations. An opportunity for them to improve their interactions with customers while re-structuring their organizations for increased productivity. Such services on the Internet have the advantage of being centrally controlled yet can be accessed by a variety of means. They can be accessed from a consumer's home PC or a company's office workstation. They can also be used by BTA staff in overseas offices to service those customers who do not themselves have access to the Internet. Finally, they can be piped into a customer service kiosk that may be located either within the BTA office or in a public area such as the local high street or an airport.

Besides the provision of tourist information on Great Britain, a key requirement from a consumer's viewpoint is the ability to book services via the BTA's Internet site. However, although the site may well incorporate so called 'hot links'

to the reservation systems of major companies, there is no such facility for SMEs. So, for example, even though it would be extremely useful for consumers to be able to view bed and breakfast establishments, make a selection and then book a room for a particular range of dates – this function is not supported directly by the BTA.

The reason for this is principally because the BTA is not a commercial organization with a charter to compete with the private sector. It is primarily funded by the UK Government and is not driven solely by the need to make a profit. Having said this, it needs to generate sufficient revenue in relation to the grants it receives. This enables as much burden to be taken off the UK taxpayers as is feasibly possible within the bounds of the organization's charter. As such it would not therefore be within the BTA's goals to provide a commercial revenue generating booking service on behalf of suppliers, which could end up competing with the private sector.

But even though the BTA's Internet development programme has no specific plans for the provision of an on-line supplier booking function for SMEs, there is nevertheless a market need for such a service. This offers a real opportunity for a third party service provider. Such a company could create the infrastructure necessary to enable bookings for SMEs to be taken over the Internet. Consumers could use the BTA site to view areas of the country, browse alternative suppliers in the SME category and then be linked automatically to the third party company's booking site on the Internet. However, at present, I do not know of any plans to develop such a capability.

Access to a supplier's product inventory is a natural extension of the information services provided by the VisitBritain site. It would enable consumers to go one step further than basic information gathering and allow them to use a booking engine to buy products and services directly from suppliers. In all probability, a third party booking site would be a separate Web site owned and operated by the service provider. It would take a service already selected by a consumer and show the up-to-date availability. The consumer would then be offered the ability to confirm the booking and guarantee the reservation by paying a deposit using a credit or debit card. The
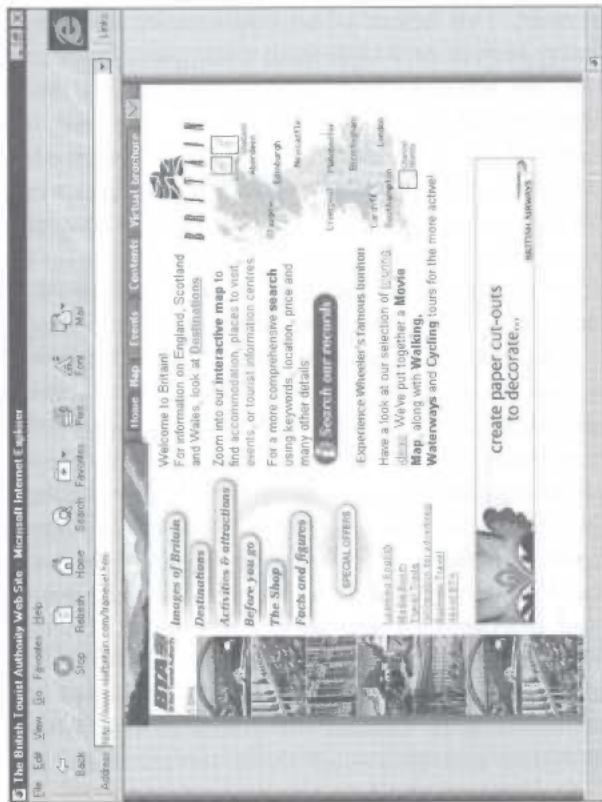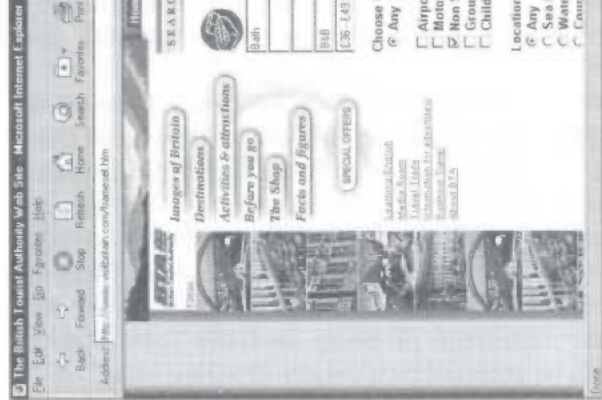
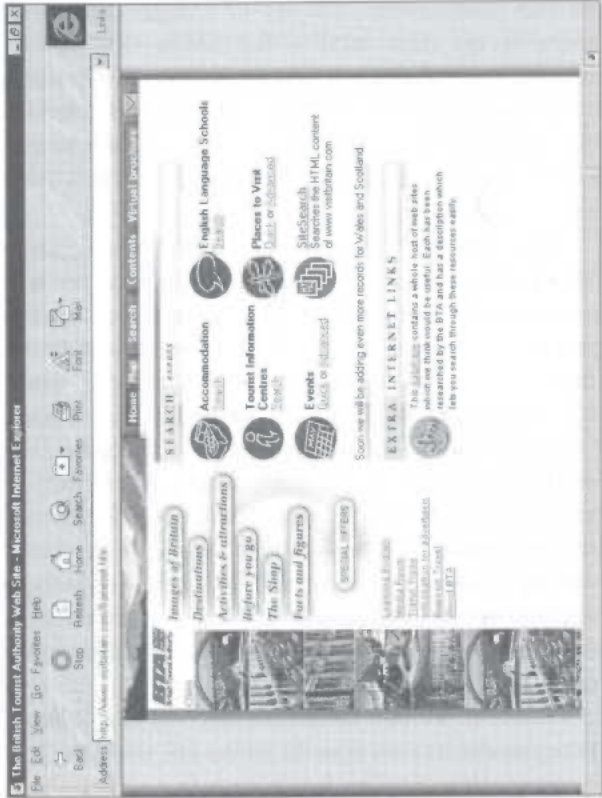Figure 5.54 VisitBritain home page (above)

Figure 5.55 Search page (above right)
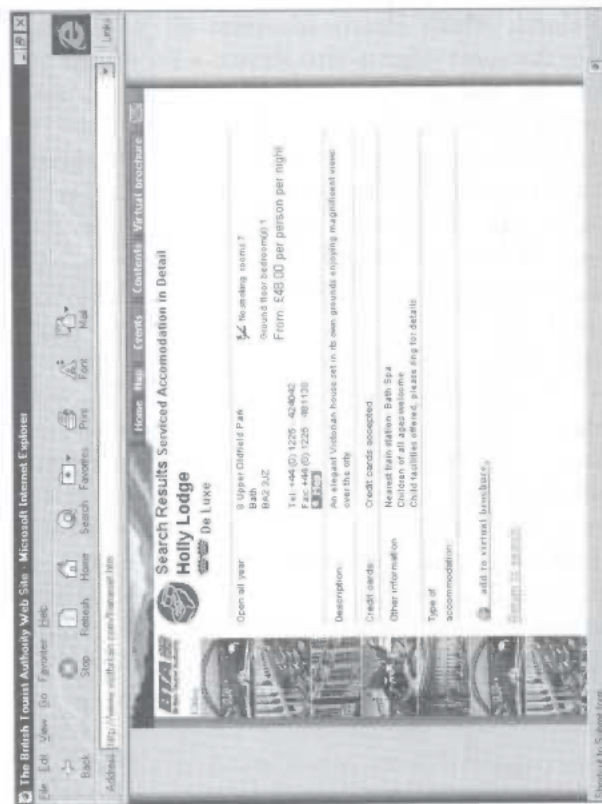
Figure 5.56 Search parameters (bed and breakfast)

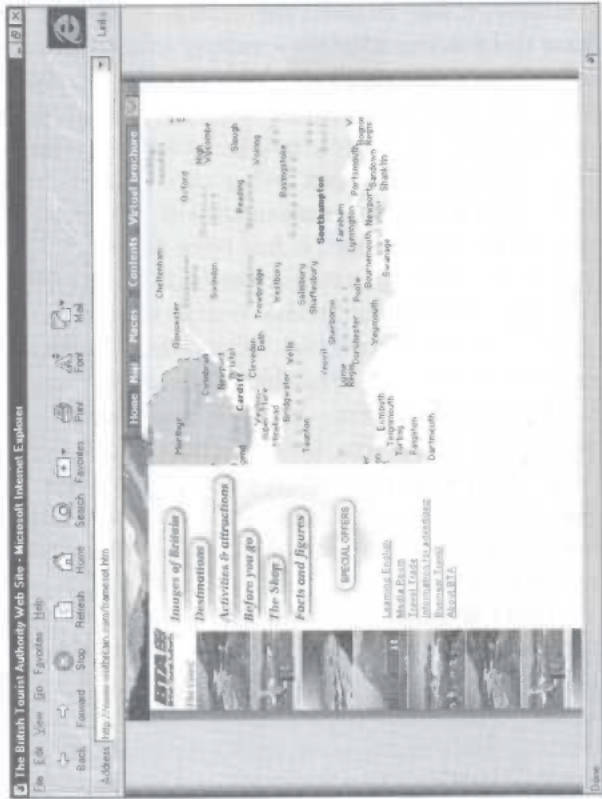**Figure 5.57** Bed and breakfast in Bath (above)

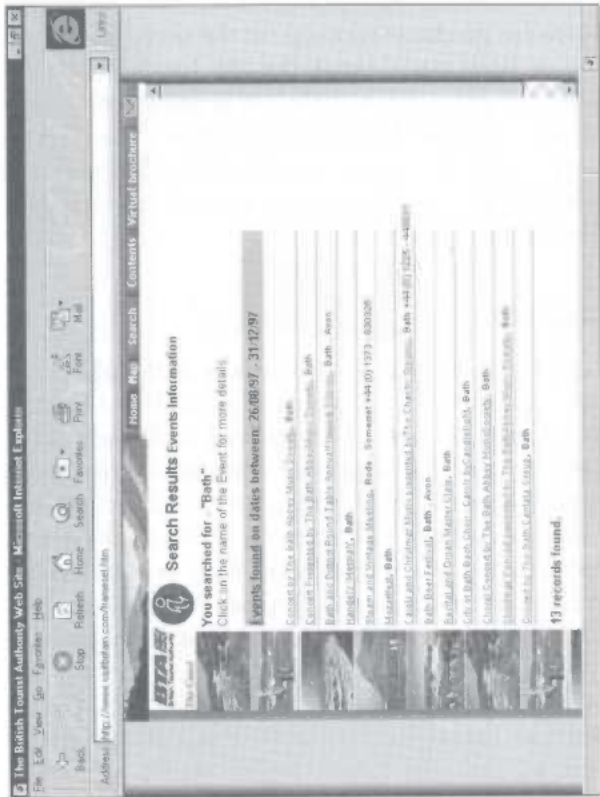**Figure 5.58** Area map (above right)

Figure 5.59 Events in Bath

company could then use some form of EDI message for booking purposes, like the TTI RESCON approach (see Chapter 1) and thereby derive a commission from the SME supplier. The BTA would no doubt encourage the development of a service like this because it promotes the UK as an inbound destination for overseas visitors, is an excellent extension of the BTA Internet site and yet does not directly involve the BTA in a commercial activity.

Finally, the feedback mechanism is an important feature of Internet technology that should not be overlooked. This is the ability of the Internet software products running on the server to keep a log of how many times the site has been visited and how users navigate their way around the pages of information. This feedback allows the BTA to keep track of how consumers are using its site, what the most popular pages are and how the data base is being searched.

GULLIVER

Gulliver is the name of Ireland's national tourist information system, which is described in detail in Chapter 2. The re-engineered Gulliver system has provided a springboard from which to launch a very effective Web site of information on the island of Ireland. In December 1996, Gulliver was launched on the World Wide Web. It is accessible via the Tourism Brand Ireland Web site and its URL is http://www.Ireland.travel.ie. It has already won an International Gold award as the world's best tourism Internet site at the ENTER '97 Tourism and Technology conference in Edinburgh and was selected by Yahoo as its 'world-wide pick of the week'. The information contained in the Gulliver data base provides the foundation for this Web site. However, at present it is only the items of static data that are replicated for display on the Web. Topics include sections on how to get to Ireland from different countries, places to stay, things to do and general tourist information.

The Internet has opened up Gulliver to users around the world who are offered a wide variety of information about Ireland that is portrayed using modern technology-based media. Even from an internal perspective, it has delivered many benefits to Bord Failte (the Irish tourist board). For example, it has enabled the central Gulliver data base to be accessed from a variety of local tourist offices, each using different technologies, e.g. Apple and various PC systems. Browser technology, such as Microsoft Explorer, has provided a platform from which these end users can benefit from full inter-operability at minimal cost. But in terms of international usage, it has been found that 75 per cent of the site's visitors to Gulliver are USA-based, a market of prime importance to Bord Failte. Besides text-based information extracted from the Gulliver central data base and formatted for Internet browsers, the Web pages also show pictures of properties, famous sights and accurate maps. In only a short time, the Gulliver Web site has become a comprehensive, interactive multi-media brochure on the subjects of Irish tourism, goods and services.

Users may select hypertext links to browse through the site and find the information they require or they can use a powerful form-based search engine to find more specific data. This search engine enables users to navigate their way easily around the massive Gulliver data base. The front page of the search engine shows a map of the island of Ireland, which clearly identifies all 32 counties. On the same page is also shown a list of topics of interest and activities such as, for example, horse-riding, golf, sailing, pubs and so on. To use the search engine effectively, a topic 'box' is checked and a county is selected from a drop-down list box. The instruction to search the data base may then be given and after only a few seconds, the users are presented with a set of customized information pages and references relating to their enquiries.

An additional innovative feature of the site is the ability for users to build up electronic personalized brochures and itineraries covering their planned trips. As pages of interest are found, they may be selected for storage and accumulation. These pages may, for example, include maps, pictures and accommodation details. Once a user's search is completed all accumulated pictorial itinerary information pages may be downloaded and printed by the user. There are even plans to develop the site further so as to support electronic bookings (which are in any event already a feature of the Gulliver core system – see Chapter 2).
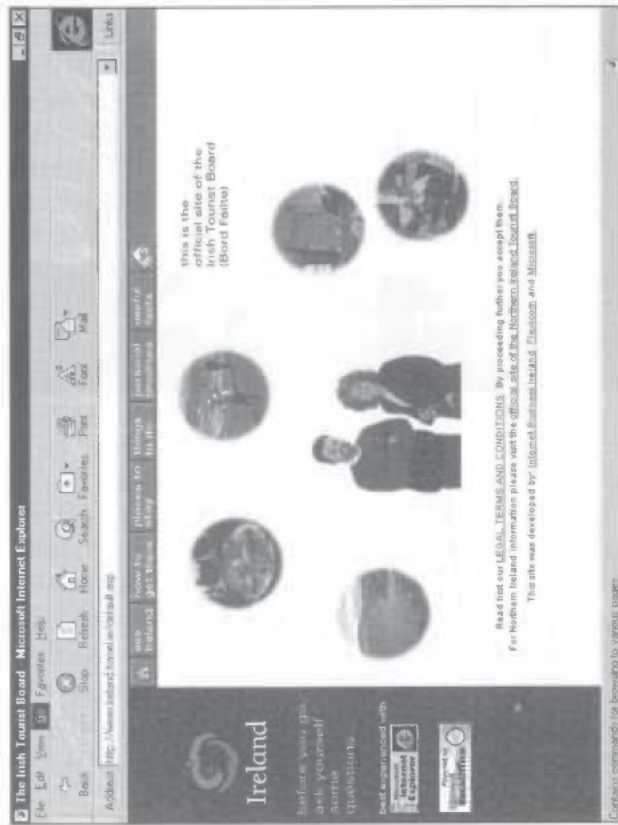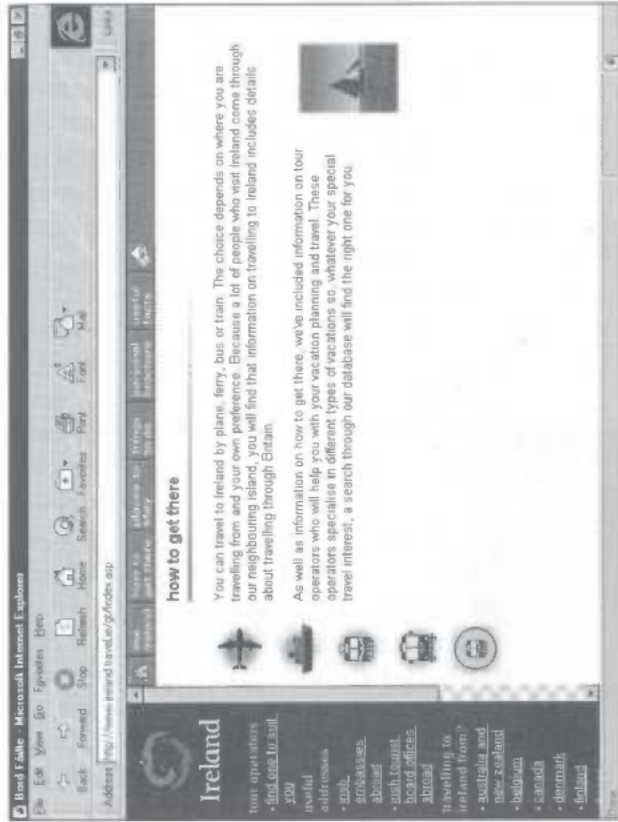
Figure 5.60 The Gulliver home page (above)

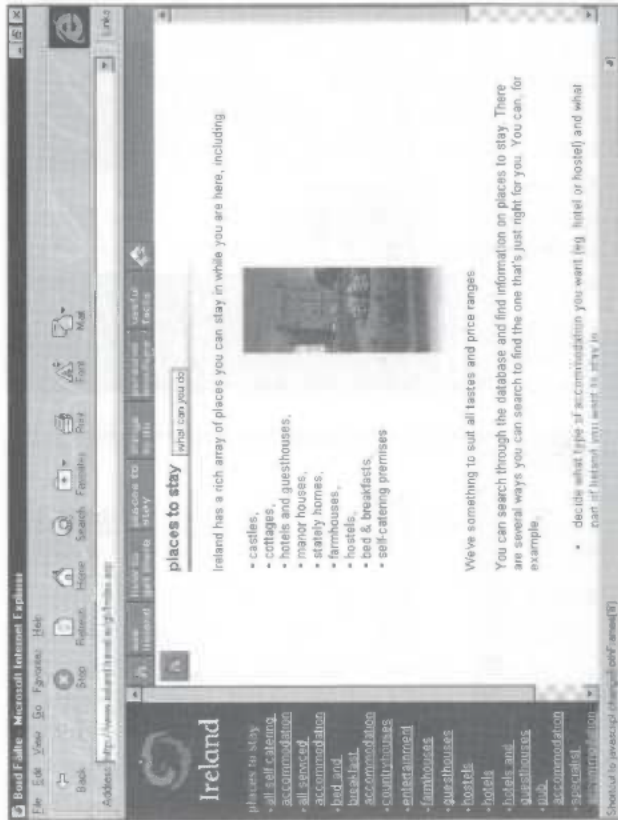**Figure 5.61** Gulliver – How to get to Ireland (above right)

Figure 5.62 Gulliver – Places to stay

things to do

There's so much to do and see in Ireland. You can search our database to select just some of the activities to be enjoyed while you're here. You'll find information on where you can

- play golf
- go horse riding
- go fishing
- go walking
- attend a jazz festival
- attend a sporting event
- visit an art gallery
- go an see a historic site
- see wildlife parks

The list is endless - the choice is yours! Select from the options on the left

There's a tremendous choice of food and restaurants. You can enjoy a simple sandwich with a pint of stout or have a gourmet meal with vintage wine. Search the database to find the right one to suit your taste and price range

useful facts *arts & culture*

overview

Few places on the planet are as crammed with history as Ireland. Everywhere you look there are castles, houses and monuments, some even older than the Pyramids. In Ireland the past is part of the present, part of the people and part of its vibrant culture

The earliest Irish art is found in carvings on megalithic monuments dating from 2500 - 2000 BC. In early historic times, Celtic art predominated, reaching its peak in illuminated manuscripts such as the **Book of Durrow** and the **Book of Kells**. While the basic Celtic patterns remain, European influences such as Viking, Romanesque and Gothic styles are seen in work executed later than the 9th century. The large, distinctly Irish, stone crosses, seen across the country date from the 9th and 10th centuries

From the mid-17th century, decorative arts and large-scale building flourished under the influence of contemporary European trends.

useful facts *Ireland - the country*

map of ireland

The following map shows the 32 counties on the island of Ireland

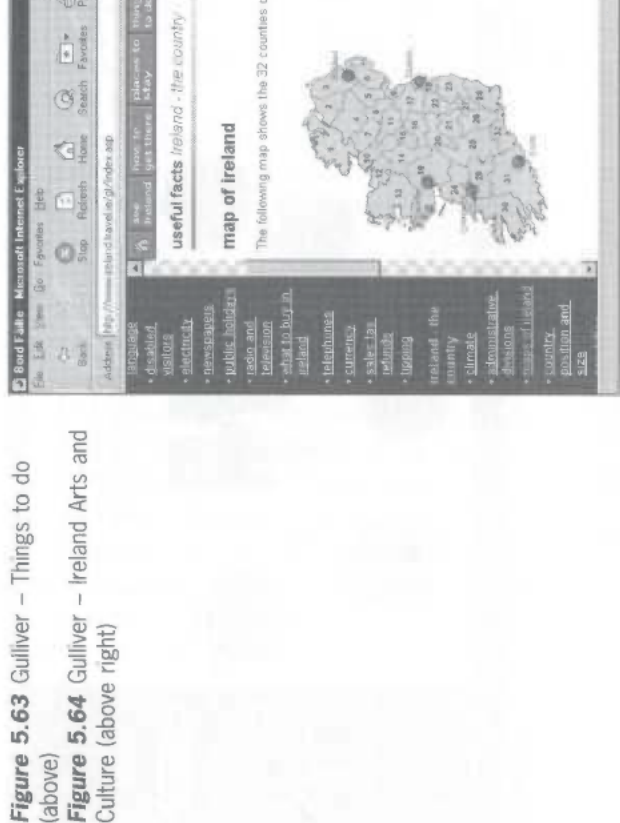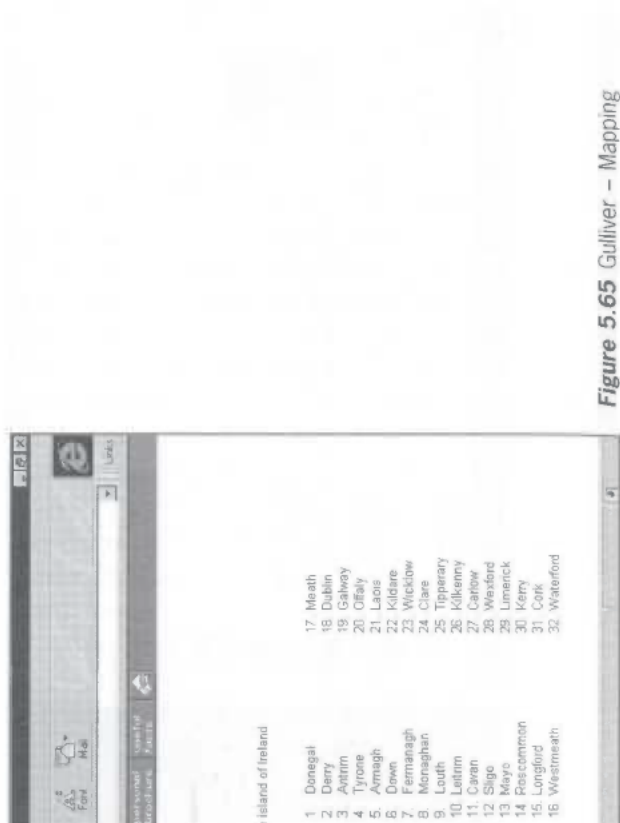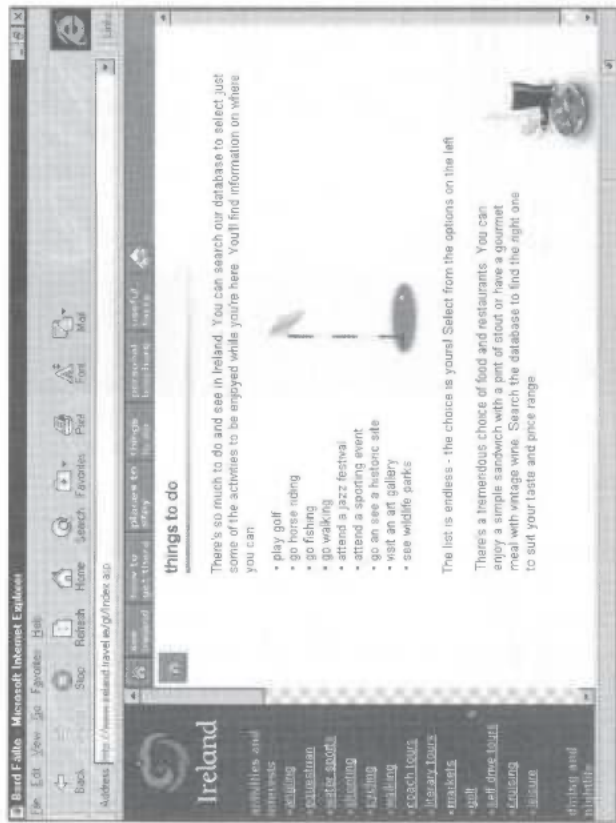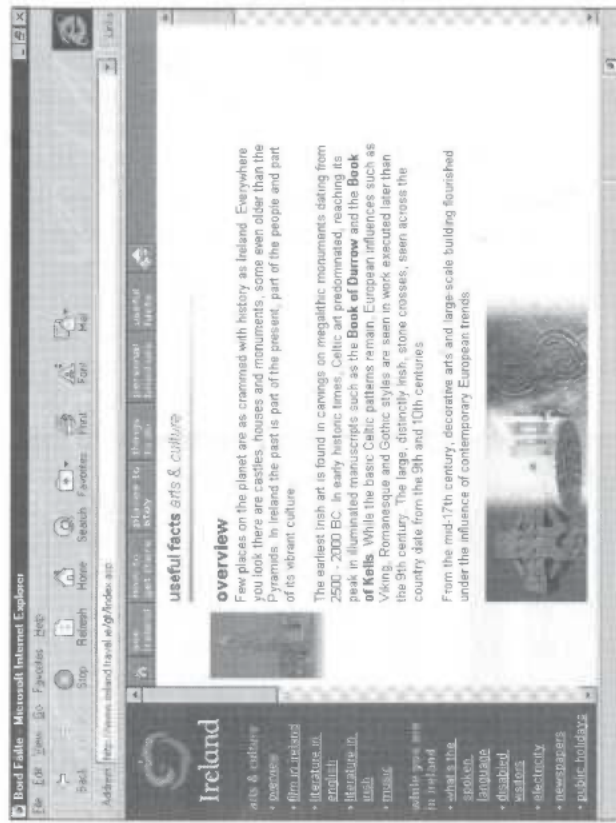| 1	Donegal	17	Meath
2	Derry	18	Dublin
3	Antrim	19	Galway
4	Tyrone	20	Offaly
5	Armagh	21	Laois
6	Down	22	Kildare
7	Fermanagh	23	Wicklow
8	Monaghan	24	Clare
9	Louth	25	Tipperary
10	Leitrim	26	Kilkenny
11	Cavan	27	Carlow
12	Sligo	28	Wexford
13	Mayo	29	Limerick
14	Roscommon	30	Kerry
15	Longford	31	Cork
16	Westmeath	32	Waterford

Figure 5.63 Gulliver – Things to do (above)

Figure 5.64 Gulliver – Ireland Arts and Culture (above right)

Figure 5.65 Gulliver – Mapping

The Gulliver site was developed over a period of just six weeks, starting in mid 1996, by a team formed from Bord Failte, the Gulliver Tourism information and reservations network, Microsoft Consulting Services, Internet Business Ireland and Flexicom. The heart of the site's functionality is made possible by the Gulliver data base. This was jointly developed by Bord Failte and the Northern Ireland Tourism Board as part of the revamped Gulliver project. It is maintained by Microsoft's SQL Server and is a distributed data base with a central version that is used to drive the Web pages. The central data base serves as a publisher of information, which is replicated and stored at remote sites where it is used by local tourist offices. Locally applied updates are consolidated at the central site, which is updated overnight. The updating of the central data base and the functions that keep track of remote changes are handled automatically by Microsoft's SQL Server.

The underlying technology used to construct the Gulliver Internet site is based upon the Microsoft BackOffice set of products. A key part of the site's platform is the IIS. This runs under Windows NT Server Version 4.0, a leading Microsoft operating system. IIS supports the maintenance of static information content and its presentation as Internet pages. It also manages the exchange of information between the Web server and the main data base controlled by Microsoft's SQL Server as described above, which is so critical for 'on the fly' Web page construction. This is a technique that allows the core data to be maintained separately from the Web page formats. Separation of these functions allows end users to maintain and update the information content without having to worry about its effect upon the Web page layout.

Another key IIS function is the ability to recognize the end user's browser and optimize the Gulliver pages for that particular site visitor. This allows site visitors who may be using an old version of an Internet browser to access fully the information content of Gulliver. The main drawback experienced by these users will be the possible lack of some images, especially those animated graphics driven by Java applets and their exclusion from any possible on-line payment or booking functions that may be introduced by Gulliver in the future. Finally, ActiveX technology is used to provide 360° Surround video. This enables site visitors to control their view of a wide-angle picture by using a PC's mouse. This is an impressive feature that can help convey a sense of actually 'being there' to the end user by allowing them to pan around a colour photograph of Ireland.

One of the next steps in developing Gulliver is to add a route-planning engine. This will allow visitors to specify the places they wish to visit and request Gulliver to work out the optimum routes, based on several parameters specified by the site's visitors. It will be of special assistance to anyone who does not have an in-depth knowledge of Ireland. Also under consideration is an on-line booking service for accommodation. However, these and other potential enhancements require a substantial amount of funding, and it is the source of the required investment that is the main issue for the future development of Gulliver. This growth and development is, to a large extent, dependent upon Ireland's plans to privatize the system and its related infrastructure. If a suitable commercial owner/operator can be found then it is highly likely that the Gulliver site will be enhanced and broadened even further.

Travel information on the Internet

There are a number of sites on the Internet that provide travel-related information. These sites are extremely useful to travellers during the planning stages of a trip. It would be virtually impossible for me to review every single information site on the Internet. However, here are just a selected few of them.

WORLD TRAVEL GUIDE ON-LINE

This is an interesting and very informative site with vast amounts of information available via an excellent indexing system. It is provided by AT&T and the Columbus Group and may be found at http://www.wtg-online.com (Fig. 5.66). The basis of the site is the information gathered by Columbus Press and used to publish its travel book entitled *The World Travel Guide*. Like the book, the site contains maps, pictures, climate charts, health/visa requirements, tables and data for every country

Figure 5.66 The World Travel Guide home page

of the world (including Antarctica). There are two search engines. The first locates a country and a topic and the second is branded HotelFinder:

- **Country/topic** Countries are selected by either clicking on a map of the world or by selecting the first letter of the country name. In either case, an index of countries is displayed from which any one may be chosen. At the country level, a variety of topics may be explored.
- **HotelFinder** As the name implies, HotelFinder navigates a large inventory of the major hotel chains. The display shows the hotel name, the city and the telephone numbers (both voice and fax). A useful facility is the option to

specify a hotel chain and to include key words for searching purposes.

In addition to comprehensive information on each topic, the user is presented with a choice of products and suppliers related to the topic. Categories include transport, accommodation, business, essentials, social, addresses, travel and resorts. These categories present valuable information and in many cases also direct the user to either: (a) the latest relevant product information held within the site, or (b) to external sites on the World Wide Web. Two sections on travel news are presented: (i) World Travel Guide News – travel news and stories from around the world, updated daily with

Figure 5.67 World Travel Guide – example screen 1

Figure 5.68 World Travel Guide – example screen 2

hotlinks to the core site and contact addresses; and (ii) World Travel Guide Features – a section of monthly editorials on a range of travel subjects linked to the Information Provider pages of the site. Both sections attempt to encourage users to visit the site and add value to information providers.

WEISSMANN TRAVEL REPORTS

Weissmann Travel Reports is a part of the Reed Travel Group. It is a leading provider of destination information to the travel industry and is accessed by millions of consumers via on-line computer services and Web sites, software applications, print publications and privately branded licensing agreements. The data are available by country profile (every country in the world), state/province profile (USA and Canada), city profiles of the most visited cities world-wide and cruise port-of-call profiles (all major ports in North America and the Caribbean). In all, the data bases include comprehensive unbiased and frequently updated information on more than 10,000 cities. There are several printed publications available from Weissmann Travel Reports. For the purposes of this book, however, I have chosen to focus on its electronic products, which may be summarized as follows:

- **Weissmann for Windows** The Weissmann Travel Reports, which are distributed by print subscription services, also are available via a Windows program that allows users to draw from all data bases to produce highly customized reports for travellers. This electronic publication is available on a subscription basis and the data is updated monthly.
- **Weissmann Travel Reports on-line with System One/Amadeus** The information in the publication entitled *North America Profiles and International Profiles* can be accessed on-line with System One/Amadeus, via a main-frame computer. This information can be customized by travel agents for their clients.
- **Travel Corner, America On-line** Weissmann Travel Reports has hosted *Travel Corner*, a core

travel service on the 'travel channel' of America On-line (a leading ISP), since 1993. Features include portions of the destination databases, a Late Breaking News service, Virtual World promotional opportunities for travel suppliers, an Exotic Destination Message Centre, contests, Web links, Ask Arnie travel advice column, Top 10 Picks, Destination of the Month, an electronic travel photo album, a mechanism for ordering individual destination reports and advertisements with click-through Web links.
- **Travel Corner on the web** A Web site that includes some of Weissmann's America On-line features as well as original travel feature articles written by Weissmann editors, an interactive Travel Personality quiz, reviews of selected travel Web links, slide shows and an interactive directory of subscribing agencies.
- **Weissmann Travel Reports' Internet licences** Weissmann Travel Reports has licensed portions of its information to several travel-related Web sites.
- **Weissmann Travel Reports on CD-ROM** A read-only CD-ROM version of Weissmann for Windows. Sold exclusively to the library and education markets.

The subscription services have a total circulation of more than 4,000 travel agencies, mostly in the USA. More than three million verifiable impressions of Weissmann Travel Reports are made annually via consumer on-line services. Although Weissmann does not accept advertising in print publications, it does accept inserts into its update packages. It also supports promotion and advertising for on-line computer-based electronic publications as well as for its own Web site. Weissmann Travel Reports offers a service for Web buttons and banners that supports advertisements for both its America On-line areas and its Web sites. Virtual World is a service offered in conjunction with an established multi-media advertising agency to create promotional destination areas for Weissmann's consumer on-line services.

6

Networks

Introduction

Telecommunications technologies hold the key to the effective use of IT in travel and tourism. These technologies provide the connection path between suppliers, intermediaries and consumers. Logically, one could argue that the Internet should have been included here. However, my reason for not doing so is primarily because in so far as travel and tourism is concerned, the Internet is a subject in itself. A subject that has as much to do with marketing as it does with the technology used to connect the suppliers with the consumers of travel and tourism products. Not that the other communications technologies do not have anything to do with marketing – they certainly do. However, generally speaking, the marketing opportunities outside the Internet are much more oriented towards interactions which take place between the network suppliers and the travel and tourism companies, rather than consumers. I don't mean to imply that there are no consumer marketing issues with other networks, there probably are; however, they are not as fundamental and as far reaching as those posed by the Internet. In any event I hope this goes some way to explaining why this chapter concentrates on other non-Internet communications technologies.

Even without the Internet, the range of communications technologies that fall into the area covered by this chapter are enormous. Far too many for me to cover adequately in this book. However, I have tried to select those areas where telecommunications services are fundamental to any company or individual in the field of travel and tourism. The first of these, video-conferencing, is one which has long threatened the very business of travel itself. I therefore thought that this would be a good place to start this chapter.

Video-conferencing

Video-conferencing is often seen as a technological application that poses some real threats to business travel. It is a technology which allows people to communicate so effectively that they do not need to travel in order to meet each other face-to-face. Instead, they can use television screens linked by high speed telecommunication lines to hold discussions and assess the impact of the conversation on participants. This ability to view the reaction of the other person is important, since it is thought that 70 per cent or more of our interpersonal communication is perceived non-verbally. This is why video-conferencing is such a richer communications media than the plain old telephone.

Although video-conferencing technology has been around for a number of years, it is just about set to become a commonplace next generation business tool, just like spreadsheets and word-processors. A tool which holds the key to future corporate survival and competitiveness. Why? Because firms which effectively exploit video-conferencing will be quicker to react to business changes, quicker to bring products to market, more effective in controlling projects and more efficient in deploying their management's time. What most firms do not realize is that they already have much of the basic infrastructure in place which allows video-conferencing to be implemented very cost effectively.

Many large multi-national companies have set up their own in-house video-conferencing studios just for this purpose. They are becoming increasingly used in the current environment of cost cutting and expense account cut-backs. There are also independent studios that can be hired for smaller companies which cannot afford to set up their own video-conferencing facilities. These may be rented out on a time used basis. On the face of it these rates seem fairly expensive. However, when compared against the cost of international travel and the time lost by highly paid staff, they begin to look a lot more attractive. So, video-conferencing is a definite long term opportunity for the business travel market of the future.

Video-conferencing is all about using technology to enhance the ability of people to meet with one another, regardless of geographic location. Video-conferencing enhances this ability by: (a) the use of technologies which have been around for some time but which have only recently attained a viable cost/performance ratio, (b) the agreement by major industrialised countries of certain key telecommunication standards, and (c) the definition of video-conferencing standards between major suppliers. The following are some of the triggers for change:

- Computer processor chips such as Intel's Pentium are now extremely fast and capable of handling the thousands of complex compression calculations necessary to send video images down communications links cost effectively.
- Camera technology has progressed to a level where very small devices can be obtained for around $200 which capture images in digital form for processing directly on Personal Computers (PCs).
- The ISDN communications standard (more on this later), is a telecommunications protocol which has been accepted and agreed by almost every industrialised country in the world. It provides a common 'language' for computers to talk to one another at very high speeds.
- The video-conferencing industry has agreed standards which govern how systems from different suppliers can 'talk' to one another using standard protocols.

There are now approximately 90,000 video-conferencing installations in daily use throughout the world, i.e. 1996). By the end of 1997 this is expected to reach 180,000 and by 1998 the total is forecast to reach 350,000. This exponential growth is borne out by the commercial exploitation of the technology in different parts of the world. For instance, in the US, AT&T Global Business Video services provides 500 publicly available video-conferencing rooms right across the USA.

Like most technologies, video-conferencing will not deliver any meaningful benefits unless it is used effectively. And to be used effectively we have to ask, what is the underlying objective of the technology. Well, it is all about helping groups of people communicate with each other. Another term used for this activity is 'meetings'. So, lets take a brief look at meetings and examine how video-conferencing can help.

Meetings management

Meetings Management is so critical to the success of video-conferencing but is so often overlooked that I consider it worthwhile spending just a few paragraphs discussing it in a little more depth. First of all there are the different types of meetings which video-conferencing supports especially well and then there is the crucial aspect of meeting planning.

First of all, let's take a look at the different types of meetings and how video-conferencing supports each one. There are really three main types; (i) group meetings, (ii) one-to-one meetings including one or more desktops and (iii) multi-point meetings. Each of these is described as follows:

- **Group meetings** This type of meeting occurs with several people (usually between six and eight), at one end of a communications link, usually sitting around a table in a studio. At the other end of the link is a similar group, again probably in a video-conferencing studio. Historically, this has been the way in which companies have used video-conferencing to date.
- **One-to-one meetings** Meetings of this type occur between two or more individuals in remote locations, using the PCs situated on each person's desk. It is this type of meeting that will almost certainly grow explosively in the next few years.

- **Multi-point meetings** These are meetings of people in various geographic locations in a conference, usually with a designated chairperson co-ordinating the meeting. Again, it is highly likely that these types of meetings will become a commonly accepted way of doing business over the next few years.

Now, let's consider how meetings should be planned. This is important because if video-conferencing is to be effective, the organization of the meeting must be carefully planned and well controlled. This may sound like 'motherhood and apple pie', but it is very important and is surprisingly often overlooked by many companies. For a meeting to be effective some fairly simple steps need to be taken:

1. A co-ordinator needs to be appointed to plan the meeting and undertake the following actions. This is often the chairperson, but is sometimes an attendee with a different role, sometimes known as a facilitator.
2. A decision needs to be taken on whether this is a one-off meeting, a series of several meetings or regular periodic meetings.
3. The meeting needs to be carefully planned. This means that the goal, objectives, scope and end products of the meeting should all be clearly defined. This will often involve one-to-one sessions with the key players or members of the management team involved.
4. The co-ordinator must decide upon the most appropriate venue for the meeting, i.e. date, time and place. It is at this point that a decision on the use of video-conferencing facilities versus physical travel should be taken.
5. The required participants need to be identified and their superiors consulted to schedule their attendance.
6. A meeting package should be circulated in advance containing the following:
   - An invitation letter that identifies the meeting attendees and clearly states the venue, e.g. date, time, place, resources, as well as the targeted end time.
   - An agenda stating the subjects to be covered, who is leading each agenda item and the amount of time allotted.
   - The goal, objectives, scope and expected end products of the meeting.
   - Any relevant briefing papers pertinent to the meeting.
7. The co-ordinator needs to book the required resources. This may mean booking a conference room or a video-conferencing slot.

Much of this may sound obvious to the enlightened readers of this book. However, let me assure you that many companies do not follow these steps and do not devote anything like enough time, effort and attention to the management of meetings. Unless this is done, however, video-conferencing will often be a waste of time and money; and the pity of this is that the blame for an ineffective meeting is often attributed to the technology.

TECHNIQUES

Video-conferencing is not simply just about people seeing and hearing each other from one side of the world or country to the other, it is about sharing information. Many video-conferencing systems provide a 'whiteboard' facility that enables what one person 'draws' on their PC to be viewed by the other people attending the virtual meeting, on their PCs. Application sharing enables all people in the session to use a common software application, e.g. word processor or spreadsheet, as well as shared data.

A good video-conferencing system, together with these tools, enables groups of people in different geographic locations to work jointly on a single document, spreadsheet or other product. It is possible for the video image to be minimized, i.e. shown in a small window on the screen, so that other shared information, e.g. the document being jointly worked upon, can be seen by all 'attendees'. Each user has control of these features on their own workstation.

These features enhance the scope for collaborative development of products and services by people in diverse geographic locations. Such techniques are rapidly becoming a fact of every day business life. A company that uses video-conferencing to achieve these ends will often gain a significant time advantage while also keeping its travel and subsistence costs to a minimum. Two crucial factors in a competitive world.

THE STANDARDS

Historically, companies have used in-house video-conferencing studios to communicate only within their own organizations. However, the emerging deployment of video-conferencing is pushing these boundaries outward. Many companies, for instance, now use video-conferencing to communicate with their major suppliers and increasingly, their key customers. This is made possible by the use of standards, not just in telecommunications, but within the video-conferencing world itself. These are some of the standards that make video-conferencing a common language for the global business community:

- **ISDN** The UK's own standard has now matured and a version has been agreed by most industrialized countries in Europe, North America and the Far East. It provides a standard and very fast dial-up communications technology that is used to support video-conferencing sessions around the world.
- **Video-conferencing standards** H.320 is the commonly accepted standard for interpreting video-conferencing sessions on all types of hardware and software. A future standard, T.120, expands this into data sharing and 'continuous presence'. (Continuous presence is a feature that allows all participants in a multi-point call to be visible on each screen in the session, in their own windows.) Other standards include H.323 (LAN video-conferencing) and H.324 (the plain old telephone service, POTS – a protocol that may be used to carry video-conferencing for residential users).

THE EQUIPMENT

Video-conferencing is implemented on PCs, which in today's technical environment, usually communicate via dial-up ISDN. In the future, more use will almost certainly be made of interconnections via company LANs, which even today are bridged across company sites via WANs. It is, however, worth bearing in mind the demands placed upon a LAN by video-conferencing applications. Video-conferencing, like other image technologies, is very resource intensive and the impact on a LAN's load must be carefully considered. If this is not done

then there is a real danger that the LAN will quickly become overloaded and all users will suffer slow response times. Hence the use of H.323 video-conferencing over LANs and WANs is really for the future.

The minimum IBM-compatible PC specification is usually a 386SX processor with at least 20 Mb of hard disk storage and 8 Mb RAM (Apple has its own Mac specifications for video-conferencing systems). In other words, only a basic PC is needed although this does assume that an additional hardware card is installed (see below). A PC requires the following enhancements to enable it to become a video-conferencing work-station:

- **Camera** This is a compact device that either sits on top of the PC in the case of desk-top systems or is strategically placed in a studio for group or multi-point systems. Some camera systems are very sophisticated and have a 'follow me' system for roving speakers inside a studio.
- **Microphone** There are many types of microphones. The best ones used for group or multi-point meetings automatically adjust for those speakers who roam around the room, and produce a constant level of sound. The audio channel runs at 7 kHz and is full duplex, i.e. concurrent two-way conversations are possible.
- **Software** This comprises special purpose computer programs that: (i) handle the audio and video images, (ii) control the compression of digital images, and (iii) oversee transmission protocols. Intel and Microsoft are seeking to make software image compression widely available over the next few years, thus making PC hardware boards, used by some video-conferencing suppliers, redundant (see below).
- **PC board** Many present-day video-conferencing systems use hardware, in the form of PC add-on boards that perform various functions. These include interfacing with the camera and microphone as well as executing the video compression/de-compression calculations. These calculations require the repetitive execution of some very complex algorithms and at present the most effective way of doing this is by using a dedicated processor chip on a PC plug-in board.

- **ISDN connectivity** The PC running the video-conferencing application needs to 'talk' to the PC at the remote location. Once the video-conferencing software has formed an image for transmission, the PC needs to send this to the ISDN port. It does this either via a directly connected ISDN line and terminal adapter on the PC itself or, more likely, it routes the transmission via the LAN to an ISDN gateway on the WAN operated by the company.

Typical video-conferencing systems range from under £1,000 for a desk-top system (excluding the PC itself), to around £40,000 for a studio system. There are several suppliers, including: Picture-Tel, Intel, Vtel, Compression Labs and GPT. In addition to this cost must be added the ISDN telecommunications expenses, which are explained below.

VIDEO-CONFERENCING COMMUNICATIONS

Speed is a key factor in video-conferencing. As expected, the faster the system runs, the better it appears *but* the more it costs. With most video-conferencing solutions there is a variety of speeds that can be chosen for different uses. For example, with a group or multi-point virtual meeting, a relatively fast speed of 30 frames per second is required to make all movement continuous and smooth. However, this requires a communications capacity of 384 Kb/s, which requires the use of a service such as BT's ISDN-30 (see below).

However, for desk-top PC to PC sessions, a slower speed of 15 frames per second is often perfectly acceptable. The only drawback of this somewhat slower speed is a rather jerky movement of the image and lip movements, which can become out of synchronization with their associated voice. The benefit is, however, that only a 128 Kb/s communication capacity is required, such as that provided by ISDN-2.

Both the above ISDN product offerings are therefore fundamental components of video-conferencing systems. ISDN is a digital switched communications technology, which is now widely available in the UK and most other countries. The basic usage charge is time-based and is exactly the same as for normal telephone calls. It is provided in the UK by BT, Mercury and some cable television companies. BT's offering comprises two optional services: ISDN-2 and ISDN-30.

- **ISDN-2** This uses simple twisted pairs of copper wires that run from the user's ISDN termination point to the nearest BT exchange. (Most BT exchanges are now digital.) Each line supports up to eight extensions and two sockets are provided from each line box installed on a customer's premises. This means that two PCs may operate at the same time, each at a speed of 64 Kb/s, or alternatively a single PC can run at 128 Kb/s. ISDN-2 involves a one-time charge of around £400 for a connection with £84 per quarter for ongoing line rental.

  Using video-conferencing with ISDN-2 at 128 Kb/s will work satisfactorily, albeit with the drawbacks mentioned above, e.g. jerky image movements. However, this may be perfectly adequate for one-to-one desk-top sessions. But for really smooth video approaching television quality, ISDN-30, which offers speeds of at least 384 Kb/s is needed.
- **ISDN-30** This uses various communications technologies to link a 2 Mb line from the BT exchange to the customer's premises. The link provides a minimum of six channels each of 64 Kb/s or 384 Kb in total. Up to 30 independent 64 Kb channels can be combined to form a fewer number of faster speed links. Two versions are available: ISDN-30 (I.421), which is a global standard, or ISDN-30 (DASS2), which was the original UK standard, now superseded by I.421.

THE BENEFITS

Put simply, the benefits of video-conferencing are those that an enterprise would realize if all its activities and those of its customers and suppliers were under one roof. It is the plain old ability of people to meet and talk about business problems that they share in common; and yes, there are the benefits of reduced physical travel as well, although these are not necessarily the predominate ones. The following summarizes some of the main benefits of video-conferencing:

- **Builds commitment and trust** It has been proven that when a person has eye contact with another, then any promise to carry out a task is usually fulfilled. This is not necessarily the case with a telephone call, which is less personal. Video-conferencing builds trust and reinforces commitment among participants.
- **Controls disparate projects more effectively** Many companies undertake projects that are formed from team members located in geographically dispersed offices. Video-conferencing allows project team members to 'attend' more frequent project co-ordination meetings at less cost.
- **Improved knowledge distribution** Video-conferencing is particularly effective in a distance learning environment. This enables, for example, product knowledge to be demonstrated far more effectively than by written instructions or costly travel. It also allows staff throughout an organization to learn about a new system or procedure that is being implemented.
- **Better support for teleworking** Many companies are beginning to use staff who do not regularly attend the office. There are many examples, including computer programmers who work from home, sales representatives who are located in remote areas and so on. These people can keep in regular contact and close touch with headquarters using video-conferencing.
- **Access to remote experts** With new technologies and emerging financial instruments, specialists are becoming ever more important to companies. However, if these specialists are remote from possible users then their knowledge is wasted. Video-conferencing allows knowledge and skills that are possessed by a few experts to be readily available throughout a company.
- **Accelerated decision making** Video conferencing supports meetings that need to be organized very quickly. When an important decision needs to be made in a short period of time, many key staff in various locations need to be involved. With video-conferencing people can be in touch almost instantly to discuss and analyse information required to make an important decision.

- **Less money spent on travelling** A company's travel budget represents a significant amount of directly controllable expense. Although video-conferencing will never completely replace travelling and face-to-face meetings, it can substantially reduce this controllable expense.
- **Less non-productive time spent travelling** Probably more important than travelling expenses is the time wasted by staff sitting in airport lounges, aeroplanes or trains. Video-conferencing enables highly paid and valuable staff to be more productive by reducing wasted time.

CONCLUSION

To be effective, video-conferencing must be embraced by senior management. It is simply no good just investing in the hardware, software and telecommunications technologies alone. Management must be proactive in directing the staff of its company to change the old ways of doing things. Some real directives need to be communicated to the workforce in order to capitalize on the video-conferencing opportunity. For example:

1. Regular management committee meetings need to be re-appraised to see if video-conferencing could eliminate the need for all attendees to be physically present in one location.
2. Line managers with travel budget responsibility should be tasked with reducing travel expenses by making more effective use of video-conferencing in their day-to-day project review meetings and other group sessions.
3. Innovative ways need to be found of making the services of experts more widely available throughout a company that is comprised of widespread places of business.

Companies need to recognize the importance of video-conferencing to their businesses. We have only to look at other related technologies, such as PCs and office productivity tools that provide word-processors and spreadsheets. Such tools are widely used and regarded as 'business as usual'. So in the same way, video-conferencing will shortly become a standard business tool.

However, if video-conferencing is to be implemented successfully by companies and used to its best effect to deliver real benefits to business, then

it must be carefully planned. A strategy needs to be formed for using video-conferencing, the appropriate system suppliers and associated standards need to be chosen carefully, the impact on existing systems needs to be weighed-up and, finally, the company culture must be adapted to embrace this new paradigm in order to derive the maximum benefits and increase the enterprise's overall success rate.

THE FUTURE

In the future, it is highly likely that faster ISDN communication services will be available at cost levels far lower than today, in relative terms. This will make video-conferencing capable of producing even higher quality images with more sophisticated techniques based on the T.120 protocol. Virtual meetings involving people from several locations, will become commonplace.

This, along with the relentless reduction in the unit cost of computing, will generate an ever increasing growth in the use of video-conferencing around the world. The knock-on effect of this is likely to be twofold: (i) it will increase the amount of personal communication between people in diverse organizations while supporting a higher degree of collaborative working, and (ii) it will reduce the level of business travel.

The lesson is clear: travel agents need to watch carefully how their customers use video-conferencing. They need to do this in order to understand the technology's strengths and weaknesses and to adapt their service strategies accordingly. However, while video-conferencing will no doubt reduce the incidence of business travel, there will almost certainly continue to be a need for face-to-face meetings between people in different geographical locations. But before travel agents can breathe a sigh of relief, there is the little matter of the Internet to deal with!

Electronic mail

Electronic mail (Fig. 6.1) is a technology that is in its infancy in the travel business at present. The closest thing to it that most travel agents would recognize, is the old telex facility. However,
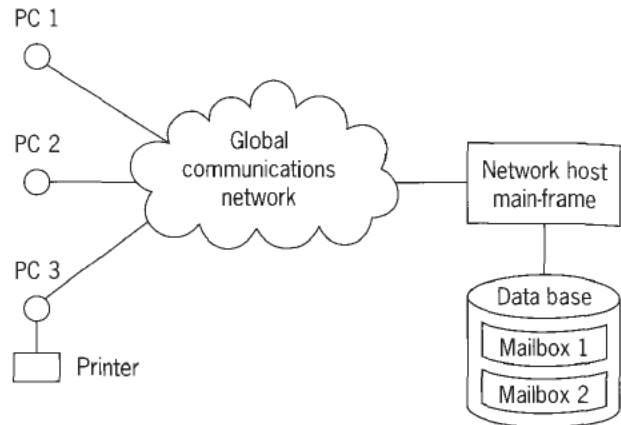
Figure 6.1 Electronic mail

electronic mail is far more sophisticated and is an ideal communications media when a dialogue with another time zone of the world is involved or when the person being contacted is travelling extensively. It can be more efficient than the telephone because it is a more concise method of communication and is therefore cheaper. Further, it doesn't require the addressee to be present at the other end of the line when a message is sent. Finally, it also has the benefit of producing an electronic copy of the dialogue or indeed a paper copy if required. There is an ever-growing band of executives who wouldn't leave home without their portable PCs with electronic mail access. This is an important fact that needs to be recognized by travel agents who have some large corporate customers in the business travel field. In other words, electronic mail is a powerful vehicle for keeping in touch with important business travel clients as they travel around the world.

To use electronic mail you need a terminal that is invariably a PC (in fact in the case of electronic mail, a portable PC offers many advantages), e-mail software that is usually bundled up with most Internet registration kits, a modem, a telephone, i.e. a telephone handset or a dial-up plug point, and registration with one of the many electronic mail services, many of which are ISPs. Each person registering with the electronic mail service provider is given a 'mail box'. This is a file into which all messages, both incoming and outgoing, are placed. In actual fact a mail box is a part of a network company's data base that is reserved for your incoming and outgoing messages.

So, when you wish to send a message to someone, you use your terminal to dial into the nearest node of the ISP. This is the nearest computer to where you happen to be located, which is given in a little quick reference booklet when you register with the ISP. Having signed on, you then specify the mail box or e-mail address of the person to whom you wish to send a message. The system can help you do this by displaying a list of all registered users and offering you the option of selecting the correct one. You then key the message into the PC and it is stored by the ISP computer and placed in the mail box of the person you specified. Then you sign off. That's it! When you wish to receive your messages you simply dial into the nearest node, sign on and request all your messages. These will be displayed one at a time as you request them. You may, of course, print them out if you have a printer attached to your terminal.

There are a number of electronic mail service providers in the UK and most of the popular ones are also ISPs. Each one offers national coverage so that for most locations only a local telephone call will be required to access a company's communications computer. Many also offer international access. The ISP is connected to the global network, known as the Internet, using links to computers in other countries. If your ISP has an international presence, then if, for example, you are travelling in another country, you can keep in contact by carrying a portable PC with you and dialling into the local network node in the country in which you happen to be. This can be done outside normal office hours. You can then access your mail box and retrieve your messages as well as send messages. If your ISP does not have an international presence then you will need to dial long distance back to the ISP's home base in the UK.

In some countries your PC may not be able to plug straight into the telephone socket. In order to get around this problem all you need is an acoustic coupler. This is a device onto which you place the actual telephone handset. It transmits by 'shouting' the modem voice sounds generated by the PC into the voice piece of the handset and receives by 'listening' to the sounds coming out of the ear piece of the telephone handset and sending

these to the PC's modem. It is possible in fact to obtain a special-purpose portable PC with an acoustic coupler built into it as an integral feature of the device.

Electronic data interchange (EDI)

Did you know that around 70 per cent of the information keyed *into* computer systems was originally printed out by another computer! What a waste of time! Also, 40 per cent of invoices sent or received by UK companies contain errors. EDI is a technology that aims to solve these problems by allowing computers in different companies to pass information between them without the intermediate steps of printing and data capture. This can only be done by using internationally accepted standards for the formatting and transmission of transactions. In other words a common language must be used. The best way of illustrating this is to take an example of two companies, call them A and B. Assume that Company B purchases a product from Company A. Now if both companies and their respective banks keep to the EDI standards then the following are possible:

- **Invoicing** Company A sends an electronic invoice to Company B. This is accomplished by the computer of Company A transmitting an invoice message to the computer of Company B.
- **Payment authorization** When Company B receives this electronic invoice it first needs to display this upon a computer screen where it is authorized. The authorizer views the invoice on the screen and if it is OK, issues an authority to pay. Payment is made by sending an EDI message to the bank instructing payment to be issued to Company A. Company B also generates a remittance advice that it sends to Company A, again by computer-to-computer data transmission.
- **Settlement** Bank B, when it receives the payment instruction, issues an inter-bank credit transfer to Bank A. In time, it will notify Company B of this transaction by means of an electronic bank statement.

- **Receipt**   Bank A receives the credit transfer and credits Company A's bank account. Again, in time this will be reported to Company A by means of an electronic statement of account.
- **Reconciliation**   Both companies use their computers to reconcile their bank accounts automatically using the electronic statements that they receive from their banks via data transmission.

All that is required to do this is agreement by both companies that they will use EDI principles to settle invoices and for both companies to have the necessary EDI software. In the UK travel industry, the large tour operators are seriously considering batch EDI between themselves and travel agents. Also, both tour operators and airline GDSs are considering interactive EDI for reservation message exchange. In both cases a network will be needed to exchange all these standard EDI messages. Let me explain these terms in a little more detail:

- **Batch EDI**   The example I gave above involving invoicing between Company A and Company B, is known as batch EDI (Fig. 6.2). It enables the above exchange of regular financial transaction to take place between organizations without a single piece of paper being printed or processed manually! But if this is to happen successfully then it is critical that the companies involved use a standard layout for an electronic invoice and remittance advice and that the banks use agreed inter-bank standards. These types of standards are called batch EDI standards.

   Batch EDI would be an ideal way for tour companies to collect funds from travel agents for holidays booked by their customers. Gone would be the familiar invoice from the tour company for the deposit followed by another for the balance of the holiday. This would be replaced by a conversation between the tour company's computer and the travel agent's back-office system. All the agent would see would be a list of all the payments that had been authorized and paid via EDI.
- **Interactive EDI**   Another type of electronic data interchange is interactive EDI (I-EDI). This is a standard that sets out how computers pass messages to each other as events actually
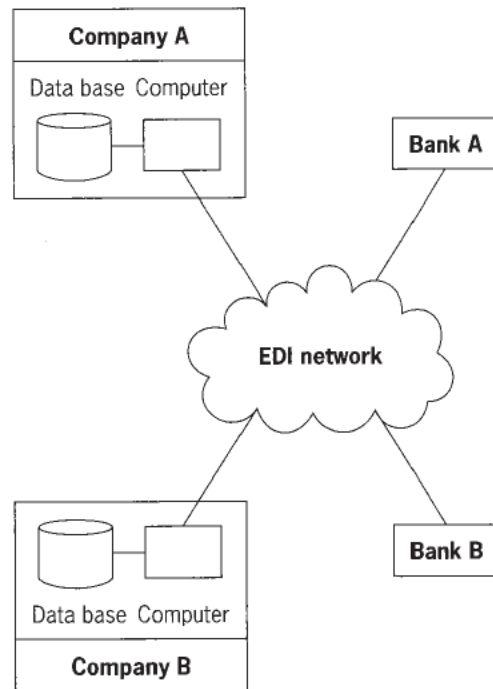

Figure 6.2 Diagram of batch EDI

happen. The EDI standards bodies have defined the precise layout of these electronic documents or messages, on a global basis. There are just one or two world-wide organizations that set these standards. In the UK, it was the ferry companies that first set some standards for conversational EDI, which were known as the UNICORN standards. Fully interactive EDI, however, was developed separately by an off-shoot of the United Nations EDIFACT standards committee under the umbrella of the ISO 9735 standard (International Standards Organization). The I-EDI standards have been developed in close conjunction with the relevant industry specific standards group. In Western Europe, the travel, tourism and leisure message development group is known as MD8.

   The GTI initiative (an early attempt to migrate the UK travel industry from viewdata to PC technology), intended to use the I-EDI standard as the basis for communications between the travel agent, the tour operator and the airline GDSs. The advantage of this approach would have been that it would offer an open set of standards that any company would be free to

use. A closed set of standards, by comparison, would, for example, be the Thomson TOP view-data standard. This is a *de facto* standard that has obviously been set by a single company and although highly successful is therefore more difficult for others to implement and may be less acceptable to other companies.

- **EDI networks** Now, if a company is to use EDI to communicate with most of its suppliers then it will need a communications facility. It probably will not want to set up a complicated and costly series of links with each of its trading partners and will try to avoid the complications of dial-up if possible. So, how will it communicate with other EDI companies? One answer is via a value-added network (VAN – see previous section for a description of VAN suppliers). The VAN acts as a postman for a company's EDI data. It receives a series of files of computer information that is addressed by the originating company to each destination company. The VANS' company stores the files just in case any get lost and then sends them to their respective destination companies. While connected to the VAN, EDI files sent to it by other companies may also be received.

There are major cost savings and operational benefits that can be gained from using EDI. These benefits become quite substantial if a high volume of transactions is involved. So it is the large trading companies that stand to gain the most from EDI. It is for this reason that some large companies have used their muscle to force their smaller suppliers to implement EDI. In fact it has become one of the terms of business for some companies, especially in the motor manufacturing industry where there are a relatively few large buyers and a lot of small suppliers. Just lately, however, even small companies have come to appreciate the benefits of EDI and are proceeding apace with implementation on their PC systems.

EDI is already widely used, especially in the manufacturing industry. It is expected that the distribution and transport sectors will lag behind slightly, although as we shall see later there have been some interesting new developments for travel agents in this area. One such initiative that unfortunately fell at the first fence was being spearheaded by a consortium of leading suppliers and was known as GTI (an early attempt to move the UK travel industry from videotex to PC technology). In general, however, EDI is set to grow very rapidly over the next few years. The reasons for this are: (a) the effect of the single European market, (b) the connection of small computer users to large corporate hubs, (c) changes in the way EDI is sold, and (d) advances in international standards.

In summary, all you need to implement EDI is a computer (which may be a PC, a mini- or a main-frame), some special purpose software that is now readily available on the IT market as a package and a communications facility, i.e. a modem and a communications line. You may also need to register with one of the UK VANs although this is not strictly necessary because EDI between only a few companies may be achieved by direct contact. Of course you will also need the commitment within your company to make it work, which in most cases means allocating sufficient time and money to allow staff to be trained adequately.

Teletext

Teletext is a relatively simple yet effective technology that has made a dramatic impact on the sale of leisure travel products in the UK, principally packaged holidays and flight-only air travel; although many specialized activities, such as UK holidays, cruising and skiing are also sold via the service. It is a one-way communications channel used for a rather specialized form of television advertising. Teletext Limited is an independent company owned by Associated Newpapers, Philips Electronics and MVI Limited. This company provides the teletext service on ITV (Independent Television) and Channel 4, the two commercial broadcasters in the UK. The teletext service reaches over 60 per cent of all UK households and provides its services to consumers free of charge. Over 18 million people each week and 9.4 million people each day watch teletext pages and of these, seven million use teletext to help them choose their holidays (Fig. 6.3). Independent surveys indicate a high level of satisfaction with the media and 98 per cent of bookers saying they would use teletext again.

Figure 6.3 Holiday teletext pages

In the UK, many tour operators and travel agents use teletext to advertise their late availability holidays. Teletext is a particularly suitable medium for this because advertising copy can be created very quickly and broadcast to consumers within a matter of minutes; and when the offers have expired or there are no more places left on specific holiday departures, then the relevant teletext pages can be modified easily and the outdated holiday departures quickly removed. Air travel seat-only operators work in a very similar way. Again it is the rapidity with which teletext advertising pages can be updated that is so attractive. One of the reasons teletext has been so successful can be attributed to its simplicity. This arises from the way the technology makes clever use of the television signals that are broadcast to 18 regions of the country (Fig. 6.4). In general, this is how it works:

- **Page creation** All teletext pages originate from the Teletext Limited headquarters in London. Some are keyed in from copy that is provided by contributors although many are sent in real-time from outside editorial or advertising agencies. The teletext holiday pages start at the main index page, which may be found on ITV page 200. From here there are many different categories of holiday information, e.g. holidays in the UK, holidays abroad, flight only, tourist exchange rates, etc. There are a number of different types of teletext advertising pages:

Figure 6.4 The UK teletext regions

- *Source page* The source page provides the advertiser with a dedicated page number. Extra frames can be added that flip over automatically in sequence if the advertiser needs to promote additional information. Potential customers are directed to the advertiser's source page through signposts on teletext's editorial pages and/or cross-referrals from other media. Or, as in the holiday classified section, it provides a page number for a particular type of holiday or destination and the frames on the section carry advertising from clients who all offer products within that market.
- *Signpost* A signpost is the strip along the bottom of an editorial page, used to direct viewers to an advertiser's source page. Advertisers select the position of the signpost to meet their marketing objectives by utilizing the mass audience of the most popular pages, e.g. TV Guide, or targeting a specific audience, e.g. City News, Sport pages, etc.
- *Mini-page* A mini-page is an advert that makes up one-third of an editorial page and is available on a limited number of high profile sites. A mini-page can be used either to direct viewers to an advertiser's source page (like a signpost) or as a stand-alone advert to generate direct response.
- *Interleaf* An interleaf is a full page advert that flips over automatically between editorial frames. Again, positioning will reflect the advertiser's targeting objectives and could appear, for example, within Channel 4's 'Personal Finance' or 'It's Your Life' feature pages.
- *Sponsorship* An advertiser can sponsor editorial pages or sections by including its name or logo on the screen. Through accreditation, the advertiser can effectively build brand awareness and identity by associating its brand with a sporting event, weather forecast or any other teletext feature.
- **Page distribution** Pages are then sent to 27 local television transmitter sites around the country, via the BT network. The information is sent independently to each transmitter site, allowing for a truly local service. Each region has around 4,000 pages available at any one time.

- **Page transmission** Pages arrive at the transmitter site and are broadcast alongside the television signal. They are transmitted to the home television receiver as a hidden part of the standard picture signal, in a continuous stream of pages that is constantly available.
- **Page reception** Teletext pages are received by the consumer's aerial and transmitted to their television set (which must of course have a teletext feature), usually in the home. While in normal mode, the teletext pages are not visible to the viewer. It is only when a special hand-held remote control device is used to switch the television into teletext mode, that the pages may be seen.
- **Page navigation** A viewer can select the pages they wish to see by entering the page number via their hand-held remote control device. These pages may be viewed free of charge at any time the viewer wishes. Pages are navigated by means of menus of page numbers and topics, as follows:
  - The viewer first of all accesses the front page menu for the service by pressing the text button on their remote control.
  - They are then guided through the service by a series of index pages that can be called up by entering the relevant three digit number.
  - An index shows a series of different pages, which are called source pages.
  - Source pages have a number of extra pages behind them that flip over automatically providing additional information.
  - Most teletext televisions include a Fastext facility. Four coloured prompts at the bottom of the teletext screen correspond to the buttons on the hand-set, allowing the viewer to move around the pages more conveniently.

A teletext screen is made up of 22 rows, each of 39 characters. Each of these characters is formed from six pixels arranged in a grid comprising three pixels high by two pixels wide. A pixel may be regarded as simply a pin-point of colour in a specific position. Characters are just standard representations of pixels within this grid. So, other shapes, besides characters can be constructed by arranging the pixels in each grid in a different way. Each line is defined in terms of how it is to be

displayed on the screen, by five special character positions that occur at the beginning of each line. These are known as Design Codes and there may be up to five of them that are used to define the colour of the background, the colour of the text, the colour of the graphic, whether it is to be displayed as single or double height and, finally, whether it is to be flashing or not. Eight colours are supported by teletext: blue, black, yellow, green, cyan, white, red and magenta. The rules governing teletext formats were established as a standard some time ago and the problem is that the pages look somewhat outdated, especially in comparison with GUIs and the Internet. However, a solution is in sight with the advent of digital broadcasting – a new technology that holds the promise of higher quality page graphics.

There is little doubt that the advent of digital broadcasting will open up new opportunities for teletext. Digital broadcasting supports a higher bandwidth for transmission purposes. This allows more flexibility, an increased number of channels and a higher definition in the pages that can be assembled and broadcast to viewers' televisions. The new service will have almost limitless character fonts and colours. It will support photographic images and potentially, in the future, also sound and video. With the advent of intelligent set-top boxes for digital broadcasting, teletext could well be integrated with the Internet. This would be an excellent way to build upon the success of the current teletext service. It would allow consumers to view high quality information pages and then follow-up with an enquiry that would link them automatically with the Internet. A link such as this could provide the interactive on-line dimension that a broadcast medium like teletext currently lacks. It would enable consumers to book as well as look. (Teletext Limited currently operates its own Web site at **http://www.teletext.co.uk.**) The current Web site includes a comprehensive guide to holiday destinations and other general interest pages. This could be enhanced as and when the demands of digital broadcasting materialize. Some of the other existing and future uses of teletext are:

- **Cross-referral advertising** Advertisers can also benefit from teletext by integrating it with their corporate advertising campaigns which may use other media. They can, for example, refer to a teletext page from their television, press and/or radio campaigns.

- **Regional advertising** Advertisers can target their products to consumers within certain regions of the country. Tour operators and travel agents can, for example, advertise late sale bargains that depart from the closest regional airport to a viewer's home.

- **Interactive teletext** This is a relatively new development by Teletext Limited and makes simultaneous use of the telephone. Viewers access teletext then use a touch tone telephone to call a number shown on the teletext screen. This number accesses a computerized voice response system that prompts the viewers to select certain pages using their remote controls. Viewers react to the aural or on-screen commands via their touch tone keypads, to interact with the service. A related service branded Talk Back was launched in 1995. This enables users to enter coded responses via their telephones and a premium rate number. Teletext Live offers interactive games with daily and weekly prizes. Interactive transactional services such as Take Off, which is offered by Teletext Limited and airline networks, enables viewers to see pages of flight details and make bookings via a touch tone telephone using their credit cards.

Teletext has been a highly successful medium for advertising holidays within the UK market. So successful that many travel agents and operators have set up special telephone service centres to handle incoming calls generated by viewers who view travel-related teletext pages. These centres sometimes use special purpose software applications that support teletext sales. Applications which, for example, enable the supplier to maintain a data base of teletext pages, by region, so that they can answer customer enquiries easier and more efficiently. Callers often begin their enquiries to these centres with: 'I know I saw *xyz* product on teletext but I can't remember the details, so can you tell me more about it'. The operator may access this data base in a variety of ways by, for instance, teletext page number, product, page display date, departure date, departure airport and so on. The fact that such systems have been developed at all

illustrates the success of teletext within the UK travel industry.

Videotex

The term videotex is the international word assigned to the technology that is often called viewdata in the UK (Fig. 6.5). Its use in UK travel and tourism started with BT's Prestel service (Fig. 6.6). However, videotex systems are also used within the travel industries of other countries, e.g. Germany's Bildschirmtext and France's Minitel. The following explanation of this technology is taken very much from a UK perspective.

Viewdata is really a special kind of communications protocol that requires a television, a telephone line, a keyboard and a special modem. Originally in the days of Prestel these were all separate items, with the keyboard and modem being incorporated into a single unit. Then with the rapid growth of Prestel in the business world, a number of major television manufacturers and specialist suppliers began selling dedicated videotex terminals. Some of these recognized the shortage of desk space in a travel agency and designed compact models such as the Sony KTX9000, which proved very popular in the 1980s. More recently, with the advent of PCs we have seen an increase in the use of PCs as viewdata terminals by means of a special purpose 'card', i.e. printed circuit card, in the back providing the necessary communications capability.

Unfortunately, there is neither the time nor the space to consider the history of how viewdata came to be a dominant technology in the UK leisure travel business. What we are more concerned
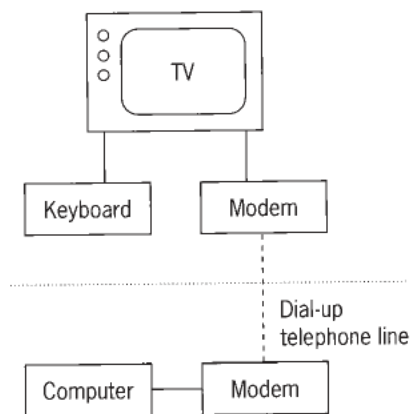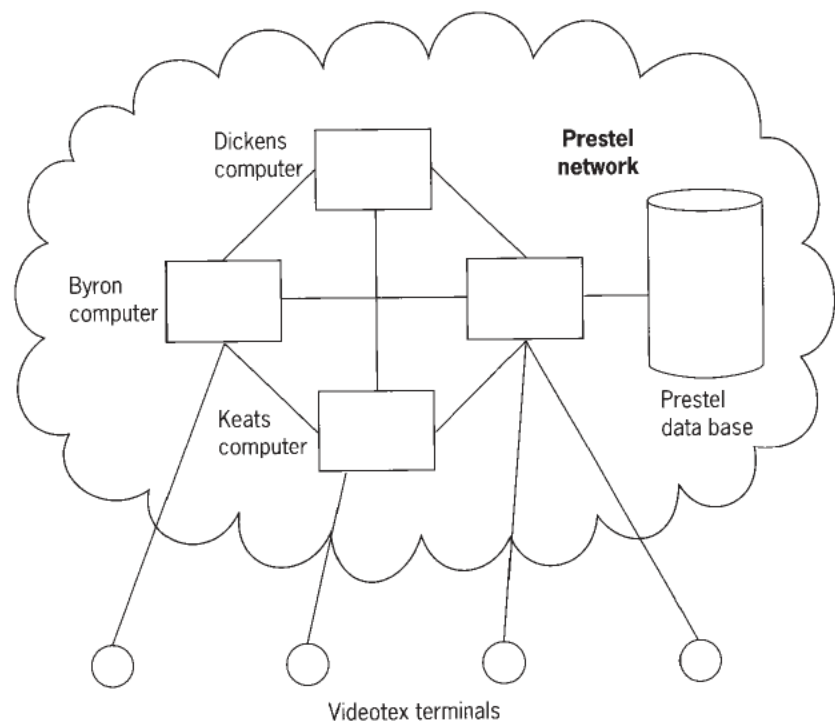
Figure 6.5 Videotex

Figure 6.6 The early Prestel service

about here is how this technology is used by the leading leisure travel supplier companies and what its strengths and weaknesses are. This will allow us to discuss possible replacement technologies, such as the Internet, in later chapters.

WHY VIDEOTEX?

To understand the commercial aspects of tour operations, put yourself in the position of a supplier of leisure travel products, whether they be packaged holidays, independent tours, ferries or airline seats. Probably your prime objective is how to reach your distribution channel, which in this case is the travel agency network, in the most effective way so that the people who sell your products can do so easily and cheaply.

The leisure travel supplier's viewpoint

As a fully automated operator, you almost certainly have a computer system that is used by your reservations staff to sell your product. This computer system has a data base of the products available, full descriptions of the products and the current status as regards availability. This is called an inventory of products. The inventory is added to whenever your marketing staff create a new product. Similarly, the inventory is reduced whenever you sell a product from it. In between times, the status of the inventory items change as customers place options to buy certain products. Everything feeds off this data base. When an item is being priced before being sold, it is on the data base in skeleton form only. Then when it is sold it will trigger the production of an invoice to the travel agent and eventually the production of tickets and the appropriate accounting entries. So, you might ask, what else can be done with the system?

The sales and reservations process

Well, having computerized, the travel supplier will no doubt look at where the operating costs are heaviest and try to reduce them. Besides the cost of the actual product itself, one of the highest areas of cost will be in product sales otherwise known as the reservations area. This needs to be staffed up and available to take calls throughout the working day. The reservations area must have the capacity to meet peaks and troughs and consequently has a high operating cost structure associated with it due to training and staff turnover factors. It also needs to have a large number of telephone lines available because the worst thing during a peak booking period is for a travel agent to get a busy or engaged tone when the reservations centre is called. This may be enough to make the travel agent try a competitor. Finally, there is the problem of trying to persuade the travel agents located in some of the more remote areas in relation to your reservations centre, to pay for the phone call to enquire about a booking.

So, the travel operator thus establishes that the reservations area is the next target for automation. But wait, why not take a leaf out of the airline's book and let travel agents do the reservation themselves by giving them a computer terminal. Good idea, until you add up the cost of giving 7,000 travel agents one or more terminals each. However, most of those travel agents already had a terminal that they were using for Prestel. This was thanks to a deal between Sealink and Radio Rentals that provided agents with a very cheap rental arrangement. The videotex technology used by Prestel was simple and the number of terminals installed in agency locations was sufficiently great to give a wide enough coverage, so the operator decides to follow this route. The next problem is how to get the operator's computer system to 'talk' to the viewdata terminals in the travel agency offices. The answer is a special communications computer, WAN telecommunications and some special software (Fig. 6.7). Let's see what this involves in a little more detail.

Accessing videotex systems

First, let's consider the communications computer, which in this context is often known as a viewdata front-end computer. (I use viewdata and videotex terminology interchangeably throughout this section although strictly speaking 'videotex' is the internationally accepted term for this technology.) This is usually a separate computer but it is sometimes a program running inside the computer that controls the operator's data base. The prime purpose of this computer is to act as a translator. It takes
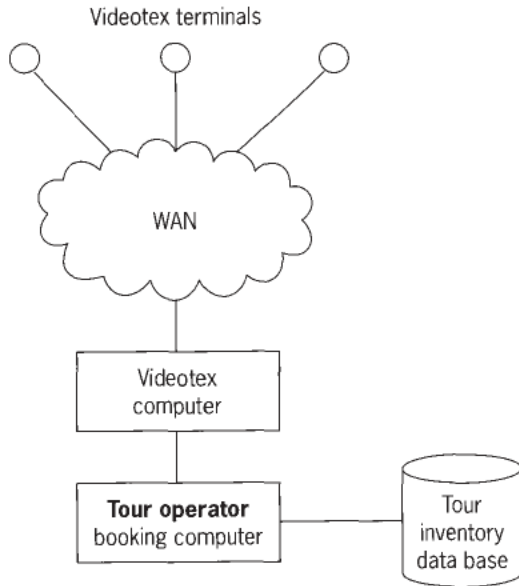
Figure 6.7 Videotex distribution systems

the operator's computer system dialogue, which is used by the sales staff in their reservations centres, and converts it into a simple set of options easily understandable by a travel agent. Furthermore it edits entries as they are made by agents and restricts the functionality of the system to those entries that the tour operator wishes to allow travel agents access to. There is another dimension to this translation process that also converts the technology from the operator's in-house computer system to videotex. Right, we are now in the situation where our in-house reservations computer has an interface that supports access by viewdata terminals in travel agents. But, how will these agents access our computer?

There are really two options: (a) travel agents can dial directly into the operator's computer using the public telephone network, or (b) the operator can connect the computer into a VANS and have travel agents dial into the VAN and access the operator's computer via the VAN. Consider the first option for a moment, which I will call direct dial. Although direct dial may seem straightforward, there are some significant drawbacks.

With direct dial, the travel agent must use the viewdata terminal to dial the operator's computer. Because operators are spread around the country, there is a good chance that a number of agents

will have to pay for a national call as opposed to a local call. Travel agents being what they are, i.e. sound business people, they will avoid having to pay a long distance national call if another option is available. Like, for instance, a competitor's system that is available on a local call basis – a situation the operator will avoid at all costs. Then there is the problem of how to cope with the peak booking times. If the operator's system is to be able to answer all incoming calls during these peaks then a maximum number of call answering exchange lines will be needed to take the maximum viewdata call volume. Also, a large capacity front-end computer will be needed to receive the calls, translate them and feed them to the operator's main-frame computer. The combination of an exchange line and the input 'plug' on the front-end computer is usually called a 'port'. If the operator is to provide a system that is always there when the agent needs it then a large number of ports is going to be needed. Outside of the peak times, this capacity is going to lie largely unused. Because the price of providing a port is substantial, then this is a high price for an operator to pay.

Alternatively, using a VAN eliminates most of these worries. Most of the large VANS like AT&T and Imminus provide local call coverage throughout the UK. This means that virtually all the agents who will dial-in to the operator's system will do so at local call rates. This is accomplished by the VANS placing strategically located communication node computers all over the country. They are placed such that travel agents only need a local call to access them. Once into the VAN, the travel agents' messages and dialogues with the operator's computer are routed through the VANS' network and into the computer of the operator. Now these node computers provided by the VANS have a great deal of capacity with which to deal with incoming calls. So, the likelihood of a busy or engaged tone being received by an agent is reduced to a minimum. Nevertheless, the operator's main-frame computer still needs the capacity to deal with the peak call volume, but this workload is somewhat reduced in comparison to a direct dial approach because the VANS' wide area network does some of the routine processing for the operator.

Finally, from an agent's viewpoint, it is more convenient to access operators via a VANS. The

reason for this is that once an agent is into a VAN, it is a lot easier to switch between the various systems without having to re-dial. The agent only needs to select the operator's system to access and the system becomes available. For operator systems on direct dial the agent must ring off from the VAN or the operator currently being accessed and make another call to the direct dial operator. So unless the operator is very large, e.g. Thomson Holidays, the most cost effective access method is via a VANS.

SUPPLIERS' VIDEOTEX SYSTEMS

Having given you a potted history and rationale for the use of videotex, or viewdata as it is more often referred to, now should be a good time to explore some of the popular systems currently in use. All of these systems are used by suppliers in the UK where viewdata is a dominant technology for the leisure travel industry, for the reasons given in the preceding section. Now although people have been saying for years that viewdata is about to die, reports of its death are greatly exaggerated. It is still very much alive and kicking (at least it was in 1997 when this edition of the book was written). Nevertheless, the writing is on the wall for viewdata and it is simply a matter of time before it is replaced with a newer, faster and more effective technology. But before this can happen, there are some substantial barriers to change that must first be overcome. I shall discuss this issue throughout the chapter but first, let's start with that sector of the travel industry that is the mainstay of viewdata – tour operators.

Tour operators

There are more tour operator reservation systems accessible via videotex than any other type of travel supplier. The background to this situation and the history of how the technology evolved is described in Chapter 1. Some of the larger operators run their own videotex networks that are accessible to travel agents on a direct dial basis with the added advantage that only a local telephone call is involved. However, most operators connect their systems to one of the leading videotex VANS such as AT&T or Imminus.

There are many different tour operator systems that can be accessed by travel agents. Most of these systems are based on videotex or viewdata technology. I first introduced the history of viewdata in the travel industry in earlier chapters in very general terms. Now it is time to be more specific. With so many tour operator videotex systems, however, it is impossible for me to cover them all in a book like this. I think the important thing is for you to understand the background and operation of at least one frequently used system because most of them are very similar indeed. Only the screen formats and some of the entries differ from system to system. The example I have chosen is the Cosmos system.

Cosmos

Cosmos started distributing its package tours to travel agents via viewdata in 1988 (see Chapter 3 for more details about the formation, background history of the company and a review of the IT that is used by Cosmos). The way this is done is via the company's ICL VME main-frame, which is linked via multiple front-end communications processors to both of the main videotex distribution networks in the UK – AT&T and Imminus (see details later in this chapter). Each front-end processor has a link to each network (Fig. 6.8), thus ensuring maximum availability to travel agent customers in the event of a failure that could occur in any one of the link's individual components.

The Cosmos viewdata booking system is similar in many ways to other tour operator reservation systems that are based on videotex technology and also, for example, to Thomson's TOP as described above. It allows agents to view availability, obtain information on holidays, make bookings and view the status of previous booking. However, one significant feature of the Cosmos system is that it also supports the RESCON standard that I described in Chapter 1 under the heading of TTI. This enables travel agents who book Cosmos tours to download transaction details automatically into their back-office systems. RESCON thus allows travel agents to print customer documentation and capture accounting information without any additional re-keying effort.

Cosmos, like many other viewdata booking systems, is plagued by a relatively new phenomenon
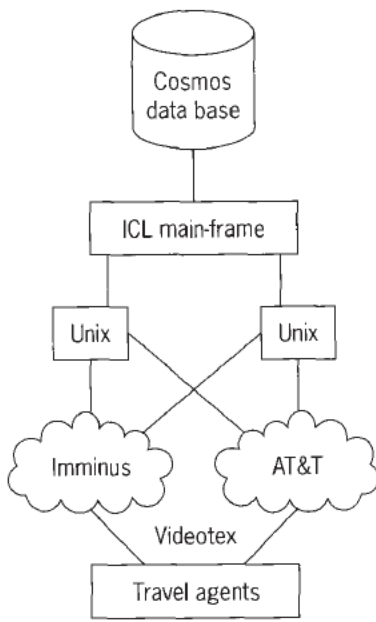
Figure 6.8 Cosmos network diagram

– the emergence of late availability scanning systems. It is therefore worthwhile examining this subject in more detail because it raises a number of important issues that will influence the possible future development of videotex-based tour operator booking systems. An analysis of one of these late availability systems, AT&T's travel late availability search (ATLAS), is presented in more detail in the next section. However, for the moment, let's consider the problem from the tour operator's viewpoint.

The market for late availability holidays has grown steadily over the past few years. Between 25 and 35 per cent of Cosmos' holiday sales are now concentrated within the late booking sector. Late availability holidays are those that would be called 'distressed stock' in many other industries. They are holidays that have a short shelf life and unless they are sold within the ensuing few days, will expire, i.e. the flight will have departed with empty seats and the hotel rooms will possibly remain empty. Most late availability holidays are those that were originally published in holiday brochures but remain unsold with only a few days to go before departure. There are even some so-called late availability holidays or packages that are specially constructed for this new market. In any event, a tour operator will invariably have a number of late availability packages available for

sale that can be booked via its viewdata system. Cosmos is no exception to this and, again like many of its competitors, has a late availability display that may be accessed by travel agents who are users of its viewdata system.

Because the proportion of late availability sales made by Cosmos is so significant, it is not surprising that a relatively sophisticated search system has been developed to support this sector of the market. A special screen has been developed, which is almost a standard used throughout the package tour industry. This is the late sale matrix. It provides travel agency users with a structured search of all late availability holidays available from Cosmos. These are presented as a series of hierarchical viewdata screens that show different types of late availability. The agent enters the search criteria, such as the preferred destination (if any), the departure date and the departure airport. This search request is sent to the Cosmos main-frame, which accesses its data base of holidays and selects those that meet the stated requirements.

At the highest level, a screen is displayed that shows a matrix with: *rows* containing the lowest-priced packaged holidays for various destinations and lengths of stay; and *columns* containing different combinations of accommodation, e.g. operator ratings such as SC for self catering, 1/2 Star, 3Star, 4Star, etc. The travel agent may select a particular row and column for further exploration. When this occurs, a refined search request is again formulated and sent to the host system that repeats the data base search but without the extraneous holiday information, i.e. the packages that are of no interest to the agent. However, the actual search function is almost identical in terms of processing power and IT resource requirements as the original. Finally, the search process ties up a front-end computer port and a route through the third-party network, all the time that the travel agent is in session with the host computer. All in all, a very resource hungry process.

While the use of the late sale matrix if just about acceptable for travel agent use, the bane of a tour operator's life is the increasing popularity among travel agents of computer-controlled scanning bureaus. These bureaus have sprung up to support the late availability market and provide a scanning service to travel agents. The bureau will

retrieve the late sale matrix from several tour operators and construct a generic late availability matrix that includes input from several tour operators. Now, despite their popularity with travel agents, tour operators do not like these scanning systems for two main reasons: (a) they compare an operator's product with its competitor's on price alone and exclude other intangible factors such as service quality, and (b) they consume vast amounts of computer resources that are costly and can impact the distribution of full price holidays. However, despite these drawbacks, the scanning bureaus nevertheless represent an incremental selling opportunity for tour operators such as Cosmos. Inclusion in bureau late sale displays increases the likelihood of a travel agency customer choosing to book Cosmos and increases the size of the distribution channel. But the price is a high one in terms of IT resources.

Cosmos has estimated, for example, that scanning systems cost it around £80,000 per year in third-party network charges alone. That's just the charges that AT&T and Imminus levy for carrying scanning messages across their networks, i.e. it excludes the cost of processing these transactions on the host main-frame and front-end computers. Because the requirement for late availability searches is so popular, Cosmos has devoted considerable systems efforts to responding to search requests as efficiently as possible. As a result, the average time to create, format and present a complete late sale matrix, ready for transmission to the end user is just 0.14 seconds. The bottom line problem can be summarized as follows. Substantial resources in terms of IT skills, computer processing power and network usage have been dedicated to the late sale market in order for Cosmos to remain competitive. The problem is that on average, Cosmos receives only a single booking as a result of every 30 late sale display requests. In other words, the sales conversion ratio is not particularly high in relation to the resources expended. However, late sales are now a firmly established market sector and it seems that search bureaus are here to stay for some time.

Nevertheless, for the reasons outlined above, Cosmos would ideally like to provide late sale information in some other way. This is because videotex technology does not lend itself to the

kind of efficient data base searches that the late sale market really needs. I explained the reasons for this above. Each late sale matrix, whether it be for the top level display or a subsequent specific display, requires almost the same amount of computer processing. So, each request involves a full search and selection from the Cosmos data base. A far more efficient approach would be for Cosmos to provide a full late sale matrix once only for each request. The recipients would then be able to store the data and extract only those parts that they need for their own particular customer display purposes. There are two main ways in which this could be done: (a) an extract file could be formed and transmitted to the late sale search bureau for their processing, or (b) the information could be formatted as an Intranet page. Taking each in turn:

- **Extract file** Cosmos could extract a file containing all data on late sale package holidays. This could be sent to the late sale search bureaus. A related issue here is the file format. As late sale search bureaus increase in number, so the different file formats also increase. From the tour operators' viewpoint, a standard file format is preferable. So, tour operators are directing a fair amount of effort within standards organizations like the UK's TTI, towards the establishment of a common file format based on EDI messaging standards (see Chapter 1 for more details of the TTI, and for more information on a specific late sale search bureau please read the section on AT&T's ATLAS product that appears below).
- **Intranet** The second alternative, which is based on Intranet technology, is very interesting and is worthy of a little more analysis. Intranets offer tour operators some significant opportunities for the future distribution of their products to travel agents. Videotex technology has some significant disadvantages that are explored in more detail in the ensuing sections. On the other hand, the Internet as it stands right now, is somewhat unreliable and is perceived to be insecure for commercial transactions. But Intranets overcome many of these problems. They are run as secure and reliable communications networks, controlled by a supplier's own

systems and available only to selected users. The only problem that remains to be overcome is, unfortunately, a pretty fundamental one. This is the size of the travel agent population that can access Intranets from their points-of-sale. This topic is addressed more fully in the section on Imminus that is given later in this chapter. But if we imagine for the moment that travel agency groups might be willing to subscribe to the kind of network services that support Intranet access, then tour operators such as Cosmos could provide a far higher level of service to their travel agent sellers using new technology that is more efficient in terms of resource utilization.

Take for instance the late sale matrix I discussed above. In an Intranet environment, the travel agent would be presented with an Internet style page with several push button options. One of these options would be late sale details. When the travel agent selected this page and completed the basic search criteria, the tour operator's system would respond with a page containing an extract of its data base containing late sale packages. The travel agent would be able to search this page for the best deal for their customer without tying-up the tour operator's computer system. The local search would be done by a combination of the browser, the locally stored data and locally executed programs, i.e. Applets. The end result would be a better looking page that would be fully scrollable thus providing a faster service to travel agents and less usage of computer and network resources for the tour operator.

Avro, Cosmos' sister company, has tried to address this problem using different technology. Its problem is almost identical to Cosmos' except that its product is seat-only air travel. This is sold on a similar basis to package tours and has its own late sale market. Avro has provided ISDN access to the late sale data base for its high volume specialist seat-sale outlets. These outlets simply initiate an ISDN call to the Avro computer that connects them to the data base. They then use terminal emulation technology to download a file of late seat-only bargains in a standard format into the subscriber's PC. The plan is to use EDI standards

for the transmission of this information, which should make it even more appealing to subscribers who may face having to download similar files from other seat-only suppliers. This overlaps in some ways with the UNICORN standard that I covered in the TTI section in Chapter 1. The basic rationale for this approach is that it is more efficient for both the supplier and the bureau. From the suppliers' viewpoint it allows their computers to support multiple sessions with several users without tying up communications resources, and enables just a single file format to be used. From the subscribers' viewpoint it enables them to receive the file quickly and assuming standards are taken up widely, allows them to process information in a single format.

Overall, Cosmos recognizes the likely emergence of Intranet technology as the way forward for travel agency booking systems. There is little doubt that an Intranet approach could provide the next generation of booking and information systems that travel suppliers could use to replace viewdata. However, this is very much a 'chicken and egg' problem. Without sufficient numbers of travel agents able to access an Intranet booking system why should Cosmos, for example, invest significant amounts in developing an Intranet front-end to its booking system. After all, the existing viewdata approach seems to be working well for the majority of agents and many of these are still running old PCs that are not sufficiently powerful to make effective use of Intranets. On the other hand, an increasingly significant number of agents now have latest generation PCs at the point-of-sale and some are already experimenting with the Internet, which uses technologies identical to Intranets. The question is: 'Who is going to make the first significant investment in Intranet technologies – the travel agent or the travel suppliers?' To safeguard against being caught out by a rapid shift towards Intranets within the travel industry, Cosmos is experimenting with the technology and thereby hopes to ensure that it establishes the necessary in-house capabilities, resources and skills to exploit these new developments, as and when they may occur.

It could well be, for example, that Cosmos may use an Intranet solution for its own in-house telephone sales operation. This would allow

Cosmos to provide telephone sales operators with a new and superior booking and information service while at the same time enabling the company to gain valuable experience of Intranet technologies. If the in-house Intranet proved successful, then Cosmos could choose to broaden its Intranet access to encompass certain important travel agency business partners on a selective basis. Such an approach could conceivably also be followed by other tour operators and this could build the islands of Intranets that I discuss further in the section on Imminus below.

Late availability search systems

Over the past few years, a new sector of the leisure market has emerged that goes under the name 'late availability' holidays. This is the term used to describe the sale of a tour company's distressed inventory – in other works, packaged tours that remain unsold with only a few days or hours to go before departure. Late availability products include each of the two main services that make up a tour, i.e. charter flights and hotels. The market for late availability is now firmly established although its popularity varies with customer demand and the number of packaged holidays that tour companies create for their inventories. I introduced late sale search systems in the Cosmos section above. This examined the technologies that support the late sale market from the suppliers' viewpoint. In this section, I'll be looking at it more from the viewpoint of the travel agent. It used to be the case that travel agents would go to great lengths to sell a last minute bargain to a customer wishing to go anywhere at anytime within the next few days (or hours). They would desperately call several tour operators and make quite a few viewdata calls to tour operator systems in their search for a bargain. Nowadays it is far simpler thanks to a few specialized late availability service companies. One good example is AT&T's ATLAS.

ATLAS

ATLAS is a viewdata system that may be used by travel agents to find last minute bargain holidays for their customers. The service is provided by AT&T in conjunction with an independent software company. This type of system is especially

Figure 6.9 ATLAS title screen

Figure 6.10 ATLAS system index

useful during the peak season when travel agency branches are busy and when a rapid customer turnaround time is essential. Instead of the travel sales consultants having to either telephone or use viewdata to access each tour operator's system, they simply use ATLAS (Fig. 6.9). The system automatically polls participating tour operators and stores the latest situation on last minute holiday bargains in a central data base.

So, at the heart of the ATLAS system is a data base of packaged holidays and flight-only special deals, all of which have been reduced in price due to the fact that their departure is imminent (Fig. 6.10). This data base is stored on a computer that is an integral part of AT&T's national network. Travel agents may access this network using their viewdata terminals or PCs with videotex emulator cards. They use these terminals to either dial into the AT&T network or they use their dedicated Direct Service link to connect to
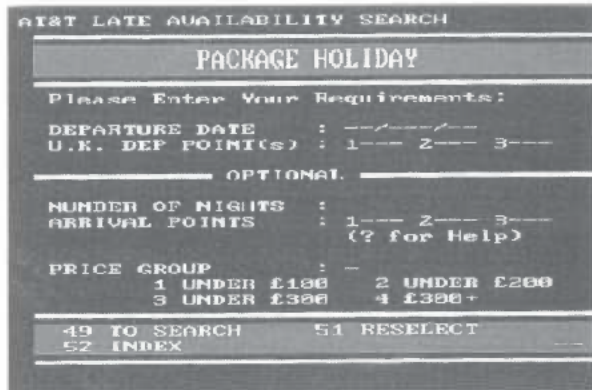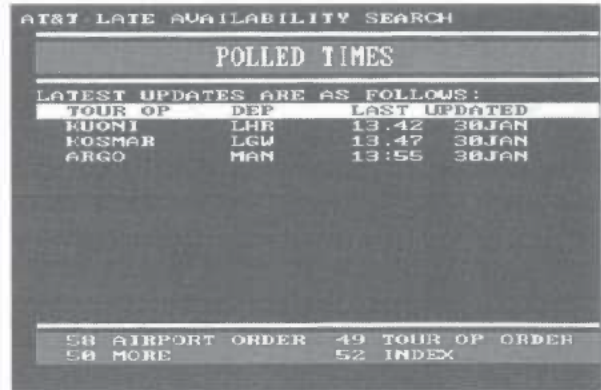
Figure 6.11 ATLAS search criteria
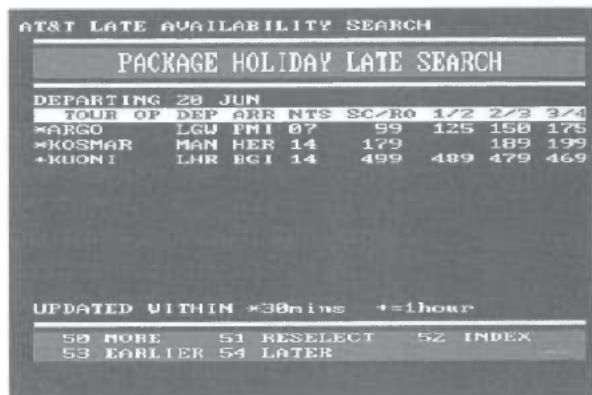

Figure 6.13 ATLAS polled times

Figure 6.12 ATLAS search results

ATLAS (Fig. 6.11). The details of the holidays are downloaded from the participating tour operating companies' systems by AT&T's special polling software, directly into the ATLAS data base (Fig. 6.12). In fact, the latest information on last minute bargains is kept up-to-date by polling the tour operators' computer systems every 30 minutes (Fig. 6.13).

Because the data base is so vast, it is vital that a good search method is provided to travel agency users of ATLAS. This is provided in two ways: (a) a pre-set filter that shows data base entries in certain sequences in an agency's branches, and (b) a search engine with criteria entered by individual sales consultants. Travel agents can use the ATLAS customization parameters to tailor the information displays to meet the particular requirements of their own branch. This allows travel agency branch management to decide which tour operators they wish their travel consultants to see and

the order in which holiday options are presented to their customers. For example, holidays may be presented in either ascending price sequence or alternatively in preferred tour operator sequence. Additionally, each sales consultant may select entries from the data base using a number of key fields: (i) departure date, (ii) the airport from which the customer wishes to depart on their holiday (up to three departure airports may be specified), (iii) up to three alternative arrival destinations, (iv) the number of nights, and (v) the customer's budget in terms of certain pre-set price bands.

The results of the data base search are displayed, one holiday to a line, on a standard viewdata screen. This display includes the price and departure details of each holiday that matches the customer's stated requirements. It then provides the travel agent with several further options, which are to: (i) search for more holidays, (ii) search earlier, (iii) search later, or (iv) specify another set of search parameters and repeat the process. If necessary, the sales consultant may choose to display a screen that shows when ATLAS was last updated with a particular tour operator's late availability information.

Ferry companies

The ferry companies were in fact the instigators of videotex in the travel business, way back in the 1980s. Ever since those early days, they have continued to play an important part in the development of the technology and the associated standards. Although many ferry bookings are still taken over the telephone by reservations staff, the level of

videotex usage is now sufficiently high for the ferry companies to continue the growth and development of videotex. In fact there is a fair amount of co-operation among the ferry companies on important issues such as standards.

The AT&T FERRY# system

Six ferry companies and the Travellog systems company collaborated in the development of a standard booking system based on videotex and accessible on the AT&T network. This common reservation system called FERRY# was launched in November 1992. It is available to any travel agent with a videotex terminal or a PC with a videotex capability, which has been registered to use the service. There are now eight ferry companies accessible via FERRY# and they are:

- Brittany Ferries.
- Hoverspeed.
- North Sea Ferries.
- P&O Ferries.
- Sally Ferries.
- Scandinavian Seaways.
- Sea France.
- Stena.

A cornerstone of the common system is the UNICORN standard. This is a standard that has been agreed among the major ferry companies and that sets out how the data are formatted during the booking process. The UNICORN standards, which were developed by the ferry companies themselves, are based largely on EDI principles, which are a set of standards governing the interfacing of computer systems owned by different companies (see Chapter 1 – Standards and the TTI group).

The FERRY system is a very good example of how standards can benefit the user of reservation services in the travel industry. A travel agent using the FERRY service on AT&T need only enter the customer's booking details at the start of the reservations process. Information such as the ferry operator required, dates of travel, passenger details, size and type of vehicle and accommodation needed, are therefore entered just once. When the first ferry company system is accessed, the AT&T system sends the data keyed to this company's system. Then, when the agent selects another ferry company the same basic booking

details are automatically sent by AT&T in standard EDI format to this ferry company's computer system. The customer's booking details are already present in the AT&T system because they are automatically stored in the standard UNICORN format as a by-product of the initial transaction. The travel agent sees only the different route information and tariffs offered by the system being currently accessed. The only way that this has been achieved is by the adoption of standards by the ferry operators concerned. The benefit to the travel agent is that the whole booking process is accelerated and productivity is increased.

Seat-only air sales

The seat-only air travel market is serviced by operators who are known as consolidators. Let me explain what this business is all about before I even mention the technology that is used to support it. In summary, consolidators are entrepreneurs who buy unfilled airline seats from the airlines and tour operators and sell them to the general public. These seats are sold to consumers via travel agents using viewdata technology.

The consolidator has the job of selling the seats to travel agents. The question we are interested in is: 'What kind of IT system is used by the seat-only operator to support these business functions?' And the answer is – the same type of system that tour operators use. Well, if you think about it the whole process is not unlike the sale of a package holiday, except that only a single travel component is involved instead of several, as is the case with an all-inclusive holiday. The type of system used by a tour operator shares a common need with the seat-only operators to maintain an inventory of travel products and then to sell the products to travel agents. There are many tour operator systems available on the travel automation market, but I shall not be evaluating them in detail in this book because I propose to focus on those systems that are of prime interest to travel agents.

However, I should like to mention briefly that one popular system is Autofile. Autofile has a well established tour operator systems product that maintains a file of inventory (in this case airline seats) and supports the sale of these seats as well as the ticket printing, documentation and associated

processing that goes with it. It has enhanced its core system with something that it has called a 'transparent link'. This is an interface to certain CRSs that allows the seat-only operator to place bookings on scheduled flights. The seat-only operator will usually have many reservations operators whose job it is to receive incoming telephone calls from travel agents and will use a computer terminal to access the tour operator system that holds their inventory of air seats.

This is accomplished by bolting on a videotex front-end to the tour operator system being used by the seat-only operator. This front-end needs to have a sufficient capacity to handle the expected number of travel agency enquiries that are generated using videotex terminals on the leisure travel counter. The whole process is, from a strictly IT viewpoint, very similar to the tour operator's scenario. The principal difference being the format of the videotex screen, which is often fundamentally different from that used by a tour operator.

Scheduled airline reservations via viewdata

The leisure travel market is changing quite rapidly in many ways. One of these changes is the increase in people making up their own independent holidays. In such cases a person will decide upon the itinerary themself and then ask a travel agent to book the various products and services for them. Independent tours, as this type of business is called, is a valuable source of revenue for the travel agent, but it does involve a great deal of extra work and expertise.

This is where IT comes into play, because using travel technology is an important way to lessen the work involved and gain access to sources of information to provide the necessary expertise. Now, because one of the base products in many such independent tours is an air ticket, access to airline systems is required. But, in many cases leisure travel agents do not have a GDS because it is too costly and does not get used frequently enough to justify itself. So, what to do? The answer is that there are now some very sophisticated viewdata airline booking systems for both scheduled, charter and consolidated airline seats that are available to travel agents at very little cost. The purpose

of this section is to explain these services and systems in a little more detail.

Viewdata scheduled airline seat reservation systems

The airlines and other distribution companies have recognized the potential of the growing seat-only market that has been generated to a large extent by the independent tour product. In fact as far as scheduled airline ticket sales are concerned, there are other sources of business besides independent tours. There is also the small self-employed person who needs to travel on business and the customer who needs to fly out to a foreign destination to visit their villa, friend or associate. There is therefore a good business case for an investment in systems and distribution channels to make scheduled airline seat sales easily available to travel agents. Below are given some of the companies and systems that are now available.

Scheduled airline seat reservations are not the sole province of the CRSs of the world. Airline seats on scheduled flights can now be made by travel agents using viewdata technology. One prominent UK system that supports this capability is EasyRes.

EasyRes

EasyRes is a product of Reed Travel Group (see Chapter 3 for more information on this major travel information company). Reed Travel Group's EasyRes is an innovative product, which was launched in the UK in 1988 and is aimed at UK ABTA travel agents in the leisure travel sector of the market. EasyRes is free to all ABTA and IATA travel agents via viewdata networks, i.e. Imminus and AT&T. It is a videotex-based, on-line scheduled airline seat reservation product. EasyRes provides guaranteed fares and instant confirmation of reservations at time of booking, for more than 45 scheduled airlines for short- and long-haul flights. It also includes access to charter and consolidated flights. One of its fundamental design principles is that it has to be easy to use. In fact, it is so easy that there is no need for a travel agent to attend a special training course of any kind. A simple booklet is enough to train the average agent in all the system's functions. Although EasyRes provides access to hotel and car booking facilities, in this section I am concerned primarily with the EasyRes air system.